

MID-LEVEL HEALTH WORKER
REFERENCE MANUALS

PN - AAN - 928

ISBN: 32401

FORMULARY

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A more detailed list of acknowledgments can be found in the *Overview* to the MEDEX Primary Health Care Series

The MEDEX Primary Health Care Series

FORMULARY

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Library of Congress Catalog Card No. 83-80675

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FUNDED BY THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT CONTRACT NO. DSPE-C-0006. The views and interpretations expressed are those of the Health Manpower Development Staff and are not necessarily those of the United States Agency for International Development

First Edition

Printed in U.S.A.

4

Table of Contents

INTRODUCTION	7	GASTROINTESTINAL DRUGS	32
PRESCRIBING AND DISPENSING DRUGS AT THE HEALTH CENTER	9	Antacids	32
ANTHELMINTICS	14	Alumina and magnesia	32
Niclosamide	14	Emetic Agent	32
Piperazine hydrate	14	Ipecac syrup	32
Bephenium hydroxynaphthoate	15	Anti-Hemorrhoidal Agents	33
Tetrachlorethylene	15	Lignocaine and hydrocortisone rectal suppository	33
Pyrantel pamoate	16	Mineral oil	33
Diethylcarbamazine citrate	16	Laxative	33
ANTIBACTERIALS	17	Magnesium sulfate crystals	33
Ampicillin	17	Replacement Solution	34
Benzylpenicillin G	18	Oral rehydration powder	34
Benzathine penicillin	19	RESPIRATORY TRACT DRUGS	35
Penicillin V	20	Bronchodilators	35
Procaine penicillin G	20	Aminophylline	35
Chloramphenicol	21	Epinephrine	35
Erythromycin	22	Cough Expectorant	35
Tetracycline hydrochloride	22	Glyceryl guaiacolate	35
Sulfadiazine	23	REPLACEMENT SOLUTIONS	37
Sulfadimidine	24	Dextrose, 5% in water	37
Dapsone	24	Dextrose, 5% in 1/2 normal saline	37
Streptomycin sulfate	25	Normal saline	38
Isoniazid	26	Ringer's lactate	38
Para-aminosalicylic acid	26	Glucose, 50% solution	39
Thiacetazone	27	Other	39
ANTI-PROTOZOANS	28	Sterile water for injection	39
Metronidazole	28	VACCINES	40
Mepacrine hydrochloride	28	BCG vaccine	40
Quinine dihydrochloride	29	DPT vaccine	40
Chloroquine phosphate	29	DT vaccine	41
ANTI-FUNGAL	31	Measles vaccine	41
Griseofulvin	31	Poliomyelitis vaccine	42
		Tetanus toxoid	42

FORMULARY

DRUGS ACTING ON THE HEART

Anti-Anginal	43
Glyceryl trinitrate	43
Diuretic	43
Hydrochlorothiazide	43
Other	44
Digoxin	44

DRUGS ACTING ON THE SKIN AND MUCOUS MEMBRANES

Drug that Shrinks Mucous Membranes	45
Phenylephrine hydrochloride	45
Antiseptic Solutions	45
Povidone-iodine, 10% solution	45
Hydrogen peroxide, 3% solution	45
Anti-Inflammatory	46
Hydrocortisone, 1% ointment	46
Anti-Fungals	46
Gentian violet, 1% solution	46
Whitfield's ointment	47
Nystatin vaginal suppository tablets	47
Nystatin oral suspension	47
Anti-Scabies, Anti-Lice	48
Benzyl benzoate, 25% lotion	48
Gamma benzene hexachloride	48
DDT, 10% powder	49
Others	49
Selenium sulfide, 2.5% lotion	49
Petrolatum ointment	50
Triple sulfa vaginal suppository tablets	50
Calamine lotion	50
Diethylstilbestrol vaginal suppository	51
Local Anesthetics	51
Lidocaine without epinephrine	51
Lidocaine, 2% with epinephrine 1:80,000	51

DRUGS ACTING ON THE NERVOUS SYSTEM

Analgesics	53
Aspirin	53
Morphine sulfate	53
Pethidine hydrochloride	54

Anti-Convulsants	54
Phenobarbital	54
Amobarbital sodium	54
Diazepam	55
Phenytoin sodium	55
Ethosuximide	56
Magnesium sulfate, 50% solution	56
Insecticide Poisoning Antidote	57
Atropine sulfate	57
Anti-Migraine	57
Ergotamine tartrate and caffeine	57
Psychotherapeutic	58
Chlorpromazine hydrochloride	58

DRUGS ACTING ON THE EYE

Tetracycline, 1% eye ointment	59
Silver nitrate, 1% solution	59
Penicillin G eye ointment	59

ANTI-ALLERGY

Chlorpheniramine maleate	60
--------------------------	----

ANTI-INFLAMMATORY

Betamethasone	60
---------------	----

OTHER

Probenecid	61
------------	----

VITAMINS AND MINERALS

Ferrous sulfate	62
Folic acid	62
Iron and folic acid	62
Vitamin A	63

OBSTETRICAL AND CHILD SPACING

Ergonovine maleate	64
Oral contraceptives	64
Spermicides	65

Alphabetical Cross Index of Drugs	67
Standard List of Drugs	69

Introduction

The Formulary is a reference manual. Use it with the Diagnostic and Patient Care Guides and the Patient Care Procedures reference manuals in your health center.

Dispensing drugs will be an important part of your work as a mid-level health worker. You will use drugs to prevent or treat disease. This Formulary contains the information that you will need to use and dispense drugs safely and effectively.

This Formulary is divided into two sections. The first section includes information about how to take a drug history, how to calculate drug doses, the importance of giving instructions to the patient, and how to label containers of drugs before you dispense them. The end of the first section includes a discussion of common drug interactions.

The second section includes information about specific drugs. The drugs are listed according to categories of use, for example, antibacterials or gastrointestinal drugs. Each drug entry includes a description in the following order.

FORMS Information about the form in which the drug is supplied and what dosages are available

USES A statement about the conditions for which the drug can be used

DOSAGES Information about the usual adult and child dosages

SIDE EFFECTS Information about the most common side effects of the drug

WARNING Warnings to alert the mid-level health worker to precautions that he should take when using and dispensing the drug

STORAGE Information about the proper storage to maintain the effectiveness of each drug

PATIENT INSTRUCTIONS Suggestions about what information to tell the patient about the drug, including how to take the drug, how often and how much to take, a description of the possible side effects, and why the drug is being given

Prescribing and Dispensing Drugs at the Health Center

Obtaining a Drug History

Before you prescribe or dispense a drug, always ask the patient whether he has taken the drug before. If he has taken the drug before, ask him if he had any difficulty with the drug. Ask him if he suffered any reactions. Ask him if he had to stop taking the drug. If the patient has had any allergic reaction to a drug, label his Patient Card with this information so that no one will give him the drug again.

Find out what drugs the patient is taking at the present time. Ask him why he is taking each drug. Ask him who prescribed the drug. Ask him to bring his drugs to the health center. When he brings you his drugs, you can be certain of what drugs he is taking. Patients easily become confused when they must take more than one drug.

If two different people are taking care of a patient at the health center, the person who dispenses the drugs should also check the patient's drug history. Make certain that you do not give the patient a drug that has caused him a problem before.

Measuring Drug Dosages

Common Measures

1000 milligrams (mg)	= 1 gram (g)
1000 g	= 1 kilogram (kg)
1000 milliliters (ml)	= 1 liter (l)
5 ml	= 1 teaspoon
15 ml	= 3 teaspoons or 1 tablespoon

Drugs that the patient takes by mouth usually come in liquid or solid form. The solid drugs often come in tablet form. Less frequently they come in the form of powder inside a hollow piece of gelatin called a capsule. Tablets are frequently marked into halves so that they can be broken into two even parts. Capsules are difficult to divide evenly. Avoid dividing capsules.

The average dose of a drug, as shown in this Formulary, will give you some information about how strong the drug is. For example, the

average adult dose of aspirin is 600 mg. In contrast, the recommended dose of glyceryl trinitrate is only 0.4 mg. Thus, 600 mg of aspirin is required to achieve its desired effect, while only 0.4 mg of glyceryl trinitrate produces the desired effect of that drug. You must take great care in measuring and giving powerful drugs that are effective in very small doses. Only a small error in measurement of a powerful drug may be quite dangerous.

Solid drugs in tablet form usually weigh less than 500 mg. Larger tablets are difficult to swallow. Many drugs that you give to adults as tablets, you must give to small children in liquid form. If the liquid form of the drug is not available, you may crush the tablet in some water so that the child can swallow the drug. You may also empty a capsule into water and have the patient drink it. However, drugs that have an unpleasant taste will be difficult to give in this way.

For adults, the standard dose of the drug is usually sufficient. However, the amount of the drug that you must give to children often appears in this Formulary on the basis of the child's body weight. The Diagnostic and Patient Care Guides provide a simplified dosage schedule so that you do not need to calculate the dose each time. However, you should understand how to calculate dosages.

To calculate the amount of a solid drug that a patient requires, simply multiply the patient's weight by the recommended dose per kg of body weight. For example, the recommended dose of thiacetazone is 2 mg per kg of body weight per day as a single dose. If the patient weighs 24 kg, multiply the patient's weight by the recommended dose of 2 mg per kg. By this calculation, you should give the patient 48 mg of thiacetazone. Thiacetazone tablets come in 50 mg, 75 mg, and 100 mg size. So the patient can take either one 50 mg tablet per day or half of a 100 mg tablet per day.

Many drugs come in liquid form. The smallest commonly used unit of liquid measure for

FORMULARY

oral use is one milliliter (ml). An average large teaspoon contains approximately 5 ml of liquid. A cup contains about 200 ml of liquid. Always show the patient how much liquid he must take. Have some teaspoons at the health center. Ask the patient to bring a teaspoon from home so that you can use it to demonstrate how much liquid he should take. Different teaspoons may hold different amounts of liquid.

This Formulary indicates the amount of drug in a given volume of liquid. From this information you must calculate the number of ml of liquid the patient must take in each dose. For example, the drug to be given is the 500 mg/5 ml mixture of sulfadimidine. You must calculate how many ml of the liquid will contain the recommended number of mg of the drug. If the patient is a child who weighs 20 to 30 kg, the recommended initial dose of sulfadimidine is 1.5 g (1500 mg). Divide the recommended dose by the amount of drug in 5 ml of liquid. $1500 \text{ mg} \div 500 \text{ mg} = 3$. By this calculation, you must give the patient 3 multiplied by 5 ml, or 15 ml of the liquid drug.

Dispensing Drugs

The entries in this Formulary are intentionally short. The mid-level health worker must read the entire entry before prescribing or administering the drug.

Before you dispense a drug, you must have the following information.

- a. Name of the drug
- b. Route of administration—oral, intramuscular, intravenous, subcutaneous, intradermal
- c. Quantity of drug the patient must take at each interval
- d. Number of times each day the patient must take the drug
- e. Total length of time the patient must take the drug

Locate the stock bottle and place it in the dispensing area. Then compare the name of the drug with the prescribed drug.

Check the size of the tablets, or the concentration of the liquid preparation of the drug.

Check the expiration date on the stock bottle. Make certain that the drug has not become outdated.

Calculate the total amount of drug that the patient will need. If the patient has a chronic condition, give him enough drug to last until his next visit.

Measure the necessary amount of drug into a container. If you do not have a supply of containers at the health center, ask the patients to bring small bottles or jars. Small plastic bags or plastic wrap is also satisfactory. Old newspaper or other paper is least satisfactory because it easily gets wet and the tablets or capsules become damaged.

You must put a label on a drug container for several important reasons.

- a. A label will help the patient to remember how often, and for how long he must take the drug. Even if the patient cannot read, he may have a friend who can read the label for him.
- b. If the patient has a reaction to the drug, or if he takes too much of it, a proper label will help the person treating the reaction to identify the drug.
- c. When the patient returns with the container, you will be able to determine the exact amount of drug that the patient has taken. Always ask the patient to bring his drugs with him when he comes to the health center.

Printed labels may be expensive or unavailable. However, you can mimeograph a simple label, such as the following, on plain paper.

Patient's Name _____ Date _____

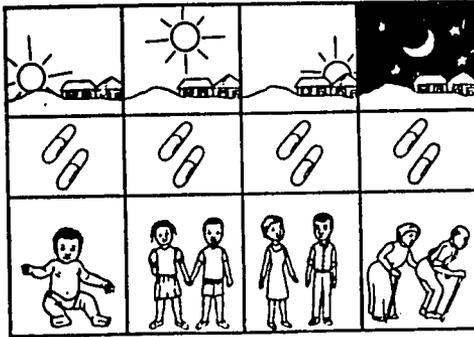
Drug _____ Reason for Taking _____

Instructions _____

Amount Dispensed _____ Signature _____

If the patient cannot read, a label with symbols may help him to remember how to take the drug. However, you must explain the symbols to the patient in order for him to understand what they mean.

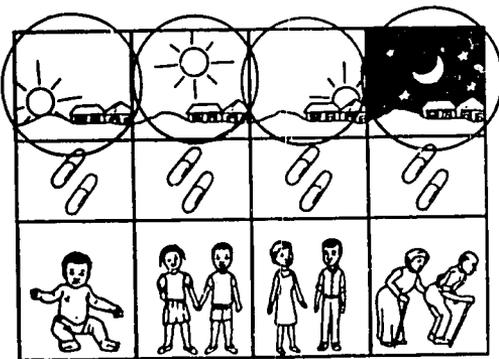
The following label is an example of one that you can use to help a patient who cannot read. It will help him to remember how much drug to take and when to take it.



Attach the label to all packets and bottles of drugs that you dispense.

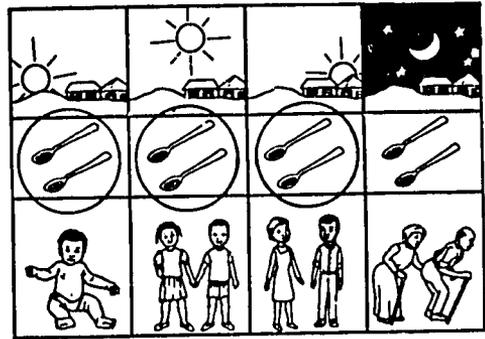
The symbols on the label tell the patient how often to take the drug, how much of the drug to take, and who is supposed to take the drug. To use the label, follow these instructions, using the example as a guide.

1. Circle the time of day that the patient is to take the drug. In the example, all four symbols are circled. This means that the patient is to take the drug in the morning, when the sun is high in the afternoon, as the sun is setting, and after dark. If you want the patient to take the drug for one, two, or three times a day, circle the times of day that you want him to take the drug.

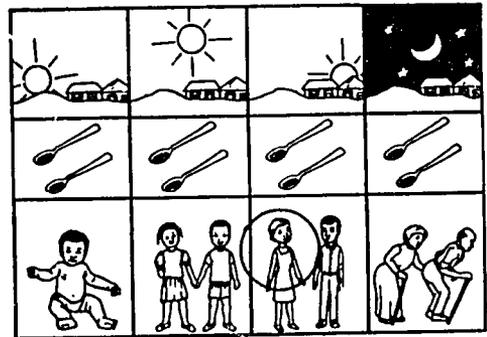


2. Just below the symbol for the time of day, draw in a symbol for how much of the drug you want the patient to take. In the example, symbols showing two tablets appear below each of the circled times of day. This means that the patient is to take two tablets at four different times of the day.

If you are dispensing a liquid, draw a picture of how many teaspoons of liquid you wish the patient to take. The following is an example of a label that shows the patient should take two teaspoons of the liquid three times a day, in the morning, in the afternoon, and at sunset.



3. Circle who the drug is intended for. In the example, the woman is circled. This means that the drug inside the packet or bottle is intended for a young or middle-aged woman. If the drug is intended for a baby, circle the baby. When the patient has many packets or bottles of drugs at home, this symbol will help him to decide which person the drug is intended for.



When you give the packet or bottle of the drug to the patient, explain the instructions on the label. Make sure that the patient understands how often and how much of the drug he is to take. Ask the patient to repeat the instructions to you so that you can be assured that he has understood your directions.

Instructing the Patient

When you dispense a drug to the patient, show him the label and review the instructions carefully. First, tell him what the drug is supposed to do. Write this on the label.

Tell the patient how much of the drug he should take each time. If possible, have the patient take the first dose immediately, while you are talking with him.

Explain carefully how many times a day the patient must take the drug. Help him to think of times when he will most likely remember to take the drug. Explain whether he should take the drug before, during, or after meals.

Give the patient any additional information that he should have about the drug. Describe common side effects. Encourage the patient to continue to take the drug even if these common side effects occur. Warn him of other possible side effects, and advise him to return to the health center if they should develop.

If the drug is a liquid that the patient should shake up before use, instruct him to do so.

When you use a label with symbols on it, show the patient the symbols. Explain the meaning of each symbol so that the patient understands them all.

Warn the patient to keep the drug in a safe place away from children.

Checking the Patient's Understanding

Make sure that the patient understands the directions that you have given to him. Checking the patient's understanding requires extra time. But it is very important. If the patient does not understand how to take the drug, he will not do so properly. He will not benefit from the drug.

When you have finished instructing the patient, ask him to tell you how he will take the drug. Ask him how much he will take each time. Ask him how long he will continue to take the drug. Ask him what the drug is for. Have the patient describe any common side effects and other possible side effects that you have told him about.

Correct any misunderstandings the patient has about the drug you are giving him. This is a very important part of dispensing drugs.

Side Effects

The unwanted effects of drugs are often called side effects. Nearly every drug will cause side effects in some patients. And nearly every drug will cause side effects when the patient takes too large a dosage. Sometimes side effects are so serious that you must tell the patient to stop taking the drug. Or you must reduce the dosage so that the side effects decrease or go away.

Sometimes drugs may cause the patient to have an allergic reaction. Allergic reactions usually occur in the skin or in the heart and lungs. The Diagnostic and Patient Care Guide for Skin Reactions to Drugs, and for Anaphylactic Shock discuss symptoms, signs, and patient care for these allergic reactions. Allergic

reactions can also occur in the intestines, the kidneys, the blood, and elsewhere in the body. If you suspect that the patient is having such an allergic reaction, tell him to stop taking the drug and transfer him to a hospital for further evaluation.

Drugs can cause side effects that resemble almost every symptom or sign of disease. However, the most common side effects of drugs that the patient takes by mouth are nausea, vomiting, pain in the abdomen, and diarrhea. Drugs that act on the nervous system may cause convulsions, excitement, drowsiness, or coma, if the patient takes too large a dosage.

Some drugs cause side effects in nearly everyone who takes the drugs. These side effects are often called common side effects. You must tell the patient about common side effects so that he will expect them. And you must encourage the patient to continue to take the drugs in spite of these common side effects.

Other side effects occur less frequently. Although you need not tell the patient about every possible side effect, you should explain that side effects are possible. Advise the patient to return and tell you about any new symptoms that he has developed since he started to take the drug.

This Formulary includes a brief paragraph for each drug describing the most important or most serious side effects. The Patient Instructions section for each drug includes common side effects that you should describe to the patient.

In all cases that a drug is contraindicated for newborns or infants, the Warning section of the entry states the contraindication.

Prepacking Drugs

You will find that you dispense certain drugs very frequently. For example, you will give most prenatal patients iron and folic acid tablets. You will dispense aspirin for a large number of conditions. You will give ferrous sulfate tablets to anemic patients.

To save time and effort, count out these drugs and place them in containers before clinic hours. This is called prepacking. You can do this work. Or you can have one of your assistants do it when the health center is not busy. Be sure to count the drugs, put them in containers, and label them with proper instructions.

Storage

In this Formulary, the term "room temperature" indicates 15° to 25° C. The term "cool place" indicates a place where the temperature does not exceed 15° C.

Drug Interactions

When the patient takes two drugs together, one drug may increase or decrease the effect of the other drug. This is called a drug interaction, because the drugs act upon each other.

The most important drug, alcohol, is one that the patient takes without your advice. You must warn him that very often alcohol will dangerously increase or dangerously decrease the effect of the drug that he is taking.

Antacids often interfere with the action of other drugs that the patient is taking by mouth. The following table lists some common drug interactions.

DRUG INTERACTIONS

IF THE PATIENT IS TAKING:	AND ALSO TAKING:	THE RESULT MAY BE:
Aspirin	Alcohol Para-aminosalicylic acid	Stomach bleeding Increased side effects and decreased effectiveness of para-aminosalicylic acid
Chloramphenicol	Amobarbital, phenobarbital, phenytoin sodium	Increased effect of amobarbital, phenobarbital, or phenytoin sodium
Isoniazid	Alcohol, antacid	Decreased effect of isoniazid
Penicillin	Antacid	Decreased effect of penicillin
Sulfadiazine, sulfadimidine	Antacid	Decreased effect of sulfadiazine or sulfadimidine
Tetracycline	Antacid, iron	Decreased effect of tetracycline
Chlorpheniramine	Alcohol, morphine, pethidine, phenobarbital	Increased sedation
Diazepam	Alcohol, pethidine, morphine, phenobarbital	Increased sedation
Phenobarbital	Alcohol, chlorpheniramine, diazepam, morphine, pethidine Phenytoin sodium	Increased sedation Decreased effect of phenytoin sodium
Phenytoin sodium	Alcohol Chloramphenicol	Decreased effect of phenytoin sodium Increased effect of phenytoin sodium

ANTHELMINTICS

NICLOSAMIDE (Yomesan)

FORM

Chewable tablets, 500 mg

USE

Niclosamide is effective against most tapeworms.

DOSAGES

Give as a single dose, or divided into two doses one hour apart.

Adults	2 g
Children	
26 kg and over	1.5 g
12 to 26 kg	1 g
Under 12 kg	500 mg

SIDE EFFECTS

Niclosamide sometimes causes stomach irritation and discomfort.

WARNING

None

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

1. Do not eat any solid food on the evening before this treatment.
2. In the early morning, take the drug before you eat or drink anything.
3. Chew the tablets thoroughly before you swallow them.
4. You may eat two hours after taking the drug.
5. This drug may cause some discomfort and stomach upset.
6. Store the drug at room temperature. Keep it out of reach of children.

PIPERAZINE HYDRATE (Antepar, Helmezine)

FORM

Elixir, 150 mg/ml

USES

Piperazine is effective against roundworms and pinworms. However, it is not the recom-

mended drug for pinworms because treatment requires one week.

DOSAGES

For roundworms, give the patient piperazine with his evening meal on two successive days. If the symptoms return, repeat the dosage after one month.

Adults	30 ml
Children	
20 kg and over	20 ml
15 to 20 kg	15 ml
10 to 15 kg	10 ml
Under 10 kg	5 to 10 ml

If pyrantel pamoate is not available, you may use piperazine in the treatment of pinworms. However, the patient must take the drug twice daily for seven days. If the symptoms return, repeat the dosage after one month.

Adults and children	
30 kg and over	7 ml twice a day
20 to 30 kg	5 ml twice a day
10 to 20 kg	2.5 ml twice a day

SIDE EFFECTS

Sometimes, piperazine causes nausea, vomiting, diarrhea, abdominal pain, headaches, and itchy skin.

WARNING

Do not give piperazine to patients who have liver disease or epilepsy.

STORAGE

Store in an airtight container in a cool place. Protect from light.

PATIENT INSTRUCTIONS

For roundworms

1. Take the drug with your evening meal.
2. If you are constipated, take a laxative the next morning. This will eliminate the worms from your body before the effect of the drug wears off.
3. This drug may cause you to have an upset stomach, diarrhea, headache, or itchy skin. However, continue to take the drug.

4. Store the drug where children cannot reach it. Keep it in a cool place.

For pinworms

1. Take the drug in the morning and at night with your meal. Continue to take the drug for seven days.
2. This drug may cause you to have an upset stomach, diarrhea, headache, or itchy skin. However, continue to take the drug.
3. Store the drug where children cannot reach it. Keep it in a cool place.

**BEPHENIUM
HYDROXYNAPHTHOATE
(Bephenium granules, Alcopar)**

FORM

Granules, 2.5 g base, in 5 g packet

USES

Bephenium is effective against roundworms and hookworms.

DOSAGES

Give as a single dose.

Adults and children	
20 kg and over	5 g
Children	
Under 20 kg	2.5 g

SIDE EFFECTS

Bephenium occasionally causes nausea, diarrhea, vomiting, headaches, and light-headedness.

WARNING

None

STORAGE

Store in an airtight container.

PATIENT INSTRUCTIONS

1. Mix the granules with water, and take the drug at least four hours after eating or drinking anything.
2. You may eat and drink one hour after you take the drug.
3. This drug sometimes causes nausea, vomiting, diarrhea, headache, and light-headedness.
4. Keep the drug in an airtight container out of reach of children.

TETRACHLORETHYLENE

FORM

Capsules, 1 ml, 2.5 ml, and 5 ml

USE

Tetrachlorethylene is active against hookworm infections.

DOSAGES

Measure the dosage carefully, and give by mouth with a syringe. Give early in the morning, after an all-night fast.

Adults and children	
40 kg and over	5.0 ml
36 to 40 kg	4.5 ml
31 to 36 kg	4.0 ml
26 to 31 kg	3.5 ml
20 to 26 kg	3.0 ml
13 to 20 kg	2.0 ml
5 to 13 kg	1.0 ml

SIDE EFFECTS

Tetrachlorethylene causes nausea, vomiting, abdominal pain, headache, and light-headedness.

WARNING

Do not treat patients with tetrachlorethylene if you suspect that they have both roundworms and hookworms. Treat the roundworms first. Do not use this drug in patients who have liver disease, who are alcoholics, or who are severely anemic.

STORAGE

Store in an airtight container in a cool place. Protect from light.

PATIENT INSTRUCTIONS

1. Do not eat any fatty foods or drink alcohol for twenty-four hours before and after taking this drug.
2. Eat only a light meal on the night before treatment.
3. Remain in bed for at least four hours after taking the drug. This drug will make you feel very light-headed. It may also cause upset stomach, abdominal pain, diarrhea, and headache.
4. This drug is poisonous. Keep it in a cool place, in an airtight container, and out of reach of children.

PYRANTEL PAMOATE (Pyrantel Embonate, Antiminth, Helmex)

FORM

Oral suspension, 250 mg/5 ml

USES

Pyrantel pamoate is effective against roundworms, hookworms, and pinworms.

DOSAGES

For roundworms or pinworms, give as a single dose.

Adults and children 40 kg and over	10 ml (500 mg)
Children 30 to 40 kg	7.5 ml (375 mg)
12 to 30 kg	5 ml (250 mg)
Under 12 kg	2.5 ml (125 mg)

For hookworms, or mixed infections with roundworms and hookworms, give as a single dose.

Adults and children 40 kg and over	20 ml (1 g)
Children 30 kg to 40 kg	15 ml (750 mg)
12 to 30 kg	10 ml (500 mg)
Under 12 kg	5 ml (250 mg)

SIDE EFFECTS

Pyrantel pamoate may cause nausea, headache, dizziness, and rashes.

WARNING

Do not use this drug in patients who have liver disease.

STORAGE

Protect from light.

PATIENT INSTRUCTIONS

1. This drug may cause some stomach upset, headache, dizziness, or skin rash.
2. Keep the drug out of reach of children. Protect it from light.

DIETHYLCARBAMAZINE CITRATE (Hetrazan, Banocide)

FORM

Tablets, 50 mg

USE

Diethylcarbamazine is effective in the treatment of onchocerciasis.

DOSAGES

In the treatment of onchocerciasis, begin by giving betamethasone. Give the patient 0.6 mg of betamethasone three times a day for one week, followed by 0.6 mg daily for two additional weeks.

Twenty-four hours after starting the betamethasone tablets, start treatment with diethylcarbamazine. Begin with a small dose, because the death of large numbers of worms can cause a severe allergic reaction. Begin treatment with one third of the full dose. Increase the daily dosage gradually over four to six days. Continue treatment for three weeks. If the patient has severe allergic reactions, increase the drug dosage more slowly.

WEIGHT OF PATIENT	INITIAL DOSE	FULL DOSE
40 kg and over	100 mg daily	100 mg three times a day
20 to 40 kg	50 mg daily	50 mg three times a day
10 to 20 kg	25 mg daily	25 mg three times a day
5 to 10 kg	12.5 mg daily	12.5 mg three times a day

SIDE EFFECTS

Nausea, vomiting, headache, dizziness, and loss of appetite occur infrequently and should not require stopping treatment.

WARNING

In cases of heavy infection, the dead worms can cause severe allergic reactions in the body. The symptoms include fever, tender swelling in the skin, muscle pain, and skin rash.

STORAGE

Store in an airtight container.

PATIENT INSTRUCTIONS

1. Take the drug once on the first day. Then take it twice on the second day.
2. From the third day on, take the drug in the morning, at noon, and at night.
3. Continue to take the drug for three weeks.
4. This drug can cause upset stomach, headache, and dizziness. However, these side effects should not cause you to stop taking the drug.
5. If you start having fever, painful swelling in your skin or muscles, a rash, or problems with your eyes, come back to the health center right away.
6. Keep the drug out of reach of children.

ANTIBACTERIALS

AMPICILLIN

FORMS

Capsules, 250 mg
 Ampicillin for oral suspension, 125 mg/5 ml
 Ampicillin sodium injection, 500 mg vials

USES

Ampicillin is effective against a broad range of bacteria, including bacterial infections of the throat, chest, skin, and genitourinary tract.

DOSAGES

The range of recommended dosages and length of treatment depend upon the type and severity of the infection. Give every six hours for the length of time indicated by the Diagnostic and Patient Care Guide for the specific condition you are treating.

	MILD TO MODERATE INFECTION	SEVERE INFECTION
	Oral capsules or suspension	Intra-muscular
Adults and children 40 kg and over	750 mg	1500 mg
Children		
20 to 40 kg	500 mg	1000 mg
10 to 20 kg	250 mg	500 mg
5 to 10 kg	125 mg	250 mg
Under 5 kg	60 mg	125 mg

In meningitis, or other specific conditions, give ampicillin intravenously or intramuscularly, every four to six hours.

Adults	1 g
Children	100 mg per kg body weight to a maximum of 1 g per dose

In treatment of gonorrhea, give 3.5 g plus 1 g of probenecid by mouth as a single dose treatment.

SIDE EFFECTS

Ampicillin can cause allergic reactions. Most frequently, the skin rash is a generalized, maculo-papular rash that itches. Warn the patient to stop taking the drug and return to the clinic if he develops a rash.

WARNING

Do not give ampicillin to patients who have a history of allergic reaction to either penicillin or ampicillin.

Use ampicillin very cautiously in patients who have any kind of allergic history such as asthma or eczema.

You must keep epinephrine and a small syringe and needle on hand at all times at the health center. Do not administer antibiotics unless you have these supplies ready to use. If the patient suddenly develops the symptoms and signs of anaphylactic shock, carry out the following procedures.

- Place the patient flat on his back with his feet elevated about one-half meter above the level of his head. Loosen his collar and make certain that his airway is open.
- Give the patient an injection of 1:1000 solution of epinephrine SC. Use the following dosages.

Adults and children 40 kg and over	0.5 cc
Children	
20 to 40 kg	0.3 cc
10 to 20 kg	0.2 cc
10 kg and under	0.1 cc
- Record the patient's pulse, respiratory rate, and blood pressure every five minutes.
- If possible, begin an intravenous infusion of normal saline solution as soon as you have given the patient epinephrine.
- If the signs of shock continue, give the patient a second injection of epinephrine in five to ten minutes. Follow this with further injections as necessary. Use the same dosage of epinephrine as the first injection.
- If the patient has swelling and itching of the skin, give him 10 mg of chlorpheniramine IM. Give children 0.5 mg per kg of estimated body weight, up to a maximum dosage of 10 mg.
- If signs of shock continue for more than thirty minutes, transfer the patient to a hos-

FORMULARY

pital as quickly as possible. Accompany him to the hospital so that you can continue to monitor his vital signs and give him epinephrine as required.

Treat less severe reactions with an antiallergy drug. See the Diagnostic and Patient Care Guide for Skin Reactions to Drugs.

STORAGE

1. Store in an airtight container in cool place.
2. Use within one week after you have added water to the dry powder.

PATIENT INSTRUCTIONS

1. Take this drug every six hours each day for _____ days. Shake the liquid well before taking it.
2. The drug works best if you take it about thirty minutes before mealtime, when your stomach is empty. Take it also at bedtime.
3. This drug can cause you to have an itchy skin rash. If you develop a rash, stop taking the drug right away, and come back to the health center.
4. Keep the bottle in a cool place. Throw away the drug that you have not used after ten days.
5. Keep the drug out of reach of children.

BENZYL PENICILLIN G (Crystalline Penicillin, Aqueous Penicillin)

FORM

Dry powder to which sterile water is added for injection, 300 mg/ml

USES

Benzylpenicillin G is effective against many bacteria, especially infections of the ears, nose, throat, chest, and skin. An intramuscular injection provides high blood levels rapidly.

DOSAGES

Use benzylpenicillin G in severe infections. Give an intramuscular injection every four to six hours. Continue the drug for at least five days. However, if the patient shows improvement, you may switch to oral penicillin V after twenty-four to forty-eight hours.

Adults and children	
40 kg and over	500 mg

Children	
20 to 40 kg	300 mg
10 to 20 kg	200 mg
5 to 10 kg	75 mg
Under 5 kg	75 mg

SIDE EFFECTS

The patient can suffer severe anaphylactic reactions, with shock, in a few minutes after intramuscular injection. Less severe reactions include generalized skin rash with severe itching, fever, joint pains, and swelling of the face.

WARNING

Do not give a penicillin injection to a patient who has a history of allergy to penicillin.

You must keep epinephrine and a small syringe and needle on hand at all times at the health center. Do not administer antibiotics unless you have these supplies ready to use. If the patient suddenly develops the symptoms and signs of anaphylactic shock, carry out the following procedures.

- a. Place the patient flat on his back with his feet elevated about one-half meter above the level of his head. Loosen his collar and make certain that his airway is open.
- b. Give the patient an injection of 1:1000 solution of epinephrine SC. Use the following dosages.

Adults and children	
40 kg and over	0.5 cc
Children	
20 to 40 kg	0.3 cc
10 to 20 kg	0.2 cc
10 kg and under	0.1 cc
- c. Record the patient's pulse, respiratory rate, and blood pressure every five minutes.
- d. If possible, begin an intravenous infusion of normal saline solution as soon as you have given the patient epinephrine.
- e. If the signs of shock continue, give the patient a second injection of epinephrine in five to ten minutes. Follow this with further injections as necessary. Use the same dosage of epinephrine as the first injection.
- f. If the patient has swelling and itching of the skin, give him 10 mg of chlorpheniramine IM. Give children 0.5 mg per kg of estimated body weight, up to a maximum dosage of 10 mg.

g. If signs of shock continue for more than thirty minutes, transfer the patient to a hospital as quickly as possible. Accompany him to the hospital so that you can continue to monitor his vital signs and give him epinephrine as required.

Treat less severe reactions with an antiallergy drug. See the Diagnostic and Patient Care Guide for Skin Reactions to Drugs.

STORAGE

1. Use within twenty-four hours after diluting with water, if kept at room temperature.
2. Use within seven days after dilution, if kept at between 2° and 10° C.

PATIENT INSTRUCTIONS

This drug may cause an itchy skin rash, fever, swelling, and pain in the joints.

BENZATHINE PENICILLIN

FORM

Suspension in water for injection, 300 mg/ml and 600 mg/ml

USES

Benzathine penicillin is effective in the treatment of bacteria that are very sensitive to penicillin. These germs include syphilis and certain kinds of skin and throat infections. Use benzathine penicillin in the prevention of rheumatic fever. Benzathine penicillin, given intramuscularly, provides a low level of penicillin in the blood, which lasts for two to four weeks.

DOSAGES

In the prevention of rheumatic fever, give 1200 mg once a month. In the treatment of primary and secondary syphilis, give 1800 mg as a single injection.

Give a single injection of 300 mg to 600 mg to children for the treatment of impetigo and bacterial tonsillitis.

SIDE EFFECTS

1. The site of injection may become very painful and tender.
2. Benzathine penicillin can cause the same types of allergic reactions as other kinds of

penicillin. These include skin rash, fever, joint pains, and generalized swelling. However, the reaction may not appear for one to two weeks.

WARNING

If the patient has a history of allergy to penicillin, do not use benzathine penicillin.

You must keep epinephrine and a small syringe and needle on hand at all times at the health center. Do not administer antibiotics unless you have these supplies ready to use. If the patient suddenly develops the symptoms and signs of anaphylactic shock, carry out the following procedures.

- a. Place the patient flat on his back with his feet elevated about one-half meter above the level of his head. Loosen his collar and make certain that his airway is open.
- b. Give the patient an injection of 1:1000 solution of epinephrine SC. Use the following dosages.

Adults and children	
40 kg and over	0.5 cc
Children	
20 to 40 kg	0.3 cc
10 to 20 kg	0.2 cc
10 kg and under	0.1 cc

- c. Record the patient's pulse, respiratory rate, and blood pressure every five minutes.
- d. If possible, begin an intravenous infusion of normal saline solution as soon as you have given the patient epinephrine.
- e. If the signs of shock continue, give the patient a second injection of epinephrine in five to ten minutes. Follow this with further injections as necessary. Use the same dosage of epinephrine as the first injection.
- f. If the patient has swelling and itching of the skin, give him 10 mg of chlorpheniramine IM. Give children 0.5 mg per kg of estimated body weight, up to a maximum dosage of 10 mg.
- g. If signs of shock continue for more than thirty minutes, transfer the patient to a hospital as quickly as possible. Accompany him to the hospital so that you can continue to monitor his vital signs and give him epinephrine as required.

Treat less severe reactions with an antiallergy

FORMULARY

drug. See Diagnostic and Patient Care Guide for Skin Reactions to Drugs.

STORAGE

Store benzathine penicillin at between 2° and 8°C in an airtight container. Protect from light. Discard on expiration date.

PATIENT INSTRUCTIONS

1. This injection may cause you to develop a skin rash. The rash may develop within one to two weeks. You may also have fever, swelling, and pain in your joints. If these problems occur, come back to the health center immediately.
2. You may also have some pain at the place where the drug was injected. This pain should not last more than one to two days.

PENICILLIN V (Phenoxymethylpenicillin)

FORMS

Tablets, 125 mg and 250 mg
Dry mixture for oral suspension, 250 mg/
5 ml

USES

Penicillin V is effective in certain infections of the ears, sinuses, throat, chest, and soft tissues. Penicillin V is quickly absorbed through the intestine.

DOSAGES

Give by mouth, every six hours for the number of days indicated by the Diagnostic and Patient Care Guide for the specific condition you are treating.

Adults and children	
40 kg and over	500 mg
Children	
20 to 40 kg	250 mg
10 to 20 kg	125 mg
5 to 10 kg	60 mg
Under 5 kg	60 mg

SIDE EFFECTS

Allergic reactions to penicillin V are very rare. However, the patient may develop skin rash, fever, joint pains, and generalized swelling.

WARNING

Penicillin V can cause allergic reactions. Do not give this drug to patients with a history of penicillin allergy.

STORAGE

After you have added water, the oral suspension will remain effective for one week at room temperature. Discard the drug after this period of time. Discard the drug after two weeks if it is kept at 2° to 8° C.

PATIENT INSTRUCTIONS

1. Foods and liquid in the stomach will interfere with this drug. Take the drug at least thirty minutes before mealtime or two hours after mealtime.
2. Take the drug every six hours. For the best results, take it before each meal and at bed time.
3. Shake the oral suspension before using it. Keep the bottle in a cool place. Throw the bottle away after two weeks.
4. This drug can cause reactions, including skin rash and fever. If these reactions occur, stop taking the drug. Return to the health center immediately.
5. Keep the drug out of reach of children.

PROCAINE PENICILLIN G

FORM

Sterile suspension for injection, 300 mg/ml and 600 mg/ml

USES

Procaine penicillin G is effective for serious infections of the skin, ear, throat, and lungs. Use procaine penicillin G when the patient is not likely to take penicillin regularly by mouth. This type of penicillin maintains blood levels for up to twenty-four hours.

DOSAGES

Give one injection every twenty-four hours. For more severe infections, give one injection every twelve hours. Continue to give the drug for the length of time indicated by the Diagnostic and Patient Care Guide for the specific condition you are treating.

Adults and children	40 kg and over	900 mg
Children	20 to 40 kg	600 mg
	10 to 20 kg	300 mg
	5 to 10 kg	150 mg
	Under 5 kg	75 mg

SIDE EFFECTS

Procaine penicillin G can cause the same type of allergic reactions as other types of penicillin.

These include skin rash, fever, joint pain, and generalized swelling.

WARNING

Do not use procaine penicillin G in newborns or when the patient has a history of allergy to penicillin. Use with caution in patients who have other allergies.

You must keep epinephrine and a small syringe and needle on hand at all times at the health center. Do not administer antibiotics unless you have these supplies ready to use. If the patient suddenly develops the symptoms and signs of anaphylactic shock, carry out the following procedures.

- a. Place the patient flat on his back with his feet elevated about one-half meter above the level of his head. Loosen his collar and make certain that his airway is open.
- b. Give the patient an injection of 1:1000 solution of epinephrine SC. Use the following dosages.

Adults and children	
40 kg and over	0.5 cc
Children	
20 to 40 kg	0.3 cc
10 to 20 kg	0.2 cc
10 kg and under	0.1 cc

- c. Record the patient's pulse, respiratory rate, and blood pressure every five minutes.
- d. If possible, begin an intravenous infusion of normal saline solution as soon as you have given the patient epinephrine.
- e. If the signs of shock continue, give the patient a second injection of epinephrine in five to ten minutes. Follow this with further injections as necessary. Use the same dosage of epinephrine as the first injection.
- f. If the patient has swelling and itching of the skin, give him 10 mg of chlorpheniramine IM. Give children 0.5 mg per kg of estimated body weight, up to a maximum dosage of 10 mg.
- g. If signs of shock continue for more than thirty minutes, transfer the patient to a hospital as quickly as possible. Accompany him to the hospital so that you can continue to monitor his vital signs and give him epinephrine as required.

Treat less severe reactions with an antiallergy drug. See the Diagnostic and Patient Care

Guide for Skin Reactions to Drugs.

Never give procaine penicillin G intravenously.

STORAGE

Store the drug in the refrigerator at 2° to 6° C. Shake the drug before giving it to the patient.

PATIENT INSTRUCTIONS

1. This drug sometimes causes severe reactions. You may develop an itchy skin rash, general swelling of your body, pain in your joints, and fever.
2. The drug will help to control the infection in your body. However, you will need one to two shots a day for the next _____ days in order for the drug to help you.

CHLORAMPHENICOL (Chloromycetin)

FORMS

Capsules, 250 mg
Oral suspension, 150 mg/5 ml

USES

Chloramphenicol is effective in treatment of typhoid fever or typhus, or of children with meningitis. It is also effective in the treatment of septic arthritis or croup. Do not use chloramphenicol as a general antibiotic, because serious reactions, including death, can occur.

DOSAGES

Give the medication every six hours for the length of time indicated by the Diagnostic and Patient Care Guide for the specific condition you are treating.

Adults and children	
40 kg and over	500 mg
Children	
20 to 40 kg	250 mg
10 to 20 kg	150 mg
5 to 10 kg	75 mg

In typhoid fever, continue the drug for at least twelve days, or for eight to ten days after the patient has ceased to have a fever. Double the above dosage for the first two to three days if the patient is extremely ill.

SIDE EFFECTS

The most dangerous side effect of this drug is severe anemia. The body stops making red

FORMULARY

blood cells. However, predicting which patients will suffer this side effect is not possible. The drug may also cause some nausea, vomiting, and diarrhea.

WARNING

Do not use this drug in infants under two months old, in pregnant women who are near to term, or in women who are nursing. The drug is toxic in young infants.

STORAGE

Store in an airtight container and protect from light.

PATIENT INSTRUCTIONS

1. Take this drug every six hours. This means that you will take the drug in the early morning, at noon, in the early evening, and late at night.
2. This drug may cause some nausea, vomiting, and diarrhea. However, you must continue to take the drug.
3. Rarely, this drug causes the body to stop making blood. However, predicting who will develop this serious problem is not possible. Your illness requires the use of this drug in spite of the risk of this reaction.
4. Keep this drug out of reach of children. Store it where it will be protected from light.

ERYTHROMYCIN

FORMS

Capsules, 250 mg
Dry mixture for oral suspension, 200 mg/5 ml

USES

Erythromycin is a useful antibiotic in patients who are allergic to penicillin. It is effective in treating the same types of infections as penicillin.

DOSAGES

Give this drug every six hours for the length of time indicated by the Diagnostic and Patient Care Guide for the specific condition you are treating.

Adults and children	
40 kg and over	500 mg
Children	
20 to 40 kg	250 mg
10 to 20 kg	200 mg
5 to 10 kg	100 mg
Under 5 kg	50 mg

SIDE EFFECTS

Erythromycin sometimes causes nausea, vomiting, and diarrhea. It may also cause allergic reactions including skin rash. Tell the patient to continue taking the medication in spite of these side effects. Rarely, the drug causes more serious side effects that require stopping its use.

WARNING

None

STORAGE

Store in an airtight container at room temperature.

PATIENT INSTRUCTIONS

1. Take this drug at least thirty to sixty minutes before you eat, when your stomach is empty. Drink a glass of water with the drug. Take the fourth dose at bedtime with a glass of water.
2. Continue to take the drug for ten days, even if you begin to feel better after a few days. Completing the full treatment is very important.
3. Do not stop taking the medication because of other side effects.
4. For the oral suspension, shake the bottle each time before taking the drug. Keep it in a cool place. Throw away the unused portion after ten days.
5. Keep the drug out of reach of children.

TETRACYCLINE HYDROCHLORIDE

FORM

Capsules, 125 mg and 250 mg

USES

Tetracycline is effective in certain types of infections for which penicillin is not effective. These include urinary tract infections, prostatitis, chronic bronchitis, typhus, bacterial gastroenteritis, and trachoma.

If erythromycin is not available, use tetracycline in patients who are allergic to penicillin, although tetracycline may not be effective in every case.

DOSAGES

In older children and adults, give the drug every six hours for the length of time indicated by the Diagnostic and Patient Care Guide for the specific condition you are treating.

	MILD TO MODERATE INFECTION	SEVERE INFECTION
Adults and children 40 kg and over	250 mg	500 mg
Children 20 to 40 kg	125 mg	250 mg

Continue treatment for at least five days, or until the condition has improved. Do not give tetracycline for more than ten days except when the longer course is called for in the Diagnostic and Patient Care Guide for specific diseases, such as prostatitis.

SIDE EFFECTS

Tetracycline may cause vomiting, nausea, and diarrhea. The patient may also develop thrush. Other toxic effects are rare.

WARNING

Tetracycline is quickly absorbed into growing teeth and will damage the teeth and cause permanent discoloration. For this reason do not use tetracycline in children under eight years of age. Do not use it in pregnant or nursing women, unless you are treating life-threatening illness.

STORAGE

Store in an airtight container. Protect from light.

PATIENT INSTRUCTIONS

1. Take this drug every six hours. Drink a full glass of water with it to prevent an upset stomach. However, take the drug at least one hour before meals, because food will interfere with the drug. Milk and milk products also interfere with the drug.
2. Do not take iron pills, laxatives, antacids, or sodium bicarbonate while you are taking tetracycline.
3. Tetracycline may cause some nausea, vomiting, or diarrhea. However, continue to take the drug in spite of these reactions.
4. Keep the drug out of reach of children. Protect it from light.

SULFADIAZINE

FORM

Tablets, 500 mg

USES

Sulfadiazine is an oral sulfonamide. Sulfadiazine is effective in the treatment of trachoma and lower urinary tract infections, and in the long-term prevention of rheumatic fever.

DOSAGES

Give a large initial dose, and then a smaller dose every six hours for two weeks.

	INITIAL DOSE	FOLLOW-UP DOSE
Adults and children 40 kg and over	3 g	1 g
Children		
30 to 40 kg	2 g	1 g
20 to 30 kg	1.5 g	750 mg
10 to 20 kg	1 g	500 mg
Under 10 kg	500 mg	250 mg

SIDE EFFECTS

Sulfadiazine can cause nausea, vomiting, loss of appetite, fever, and drowsiness.

WARNING

Do not give sulfadiazine to patients who are jaundiced, to pregnant or breast-feeding women, or to newborns.

STORAGE

Store in airtight containers and protect from light.

PATIENT INSTRUCTIONS

1. This drug must build up in your blood. Take a large dose at first and then a smaller dose every six hours for two weeks.
2. Do not stop taking the drug when you start feeling better or improving. You must take it for a full two weeks. Otherwise, the germs will remain in your body.
3. This drug leaves your body in urine. It can block up the kidneys unless you drink an extra amount of water daily. Each day while you are taking the drug, drink at least six more glasses of water than you usually drink.
4. The drug can cause some side effects, includ-

FORMULARY

ing nausea, vomiting, loss of appetite, fever, and drowsiness. Continue to take the drug even if you develop these symptoms. If other problems develop, come back to the health center right away.

5. Keep this drug out of reach of children. Protect it from light.

SULFADIMIDINE

(Sulfamethazine,
Sulfamezathine)

FORMS

Tablets, 500 mg
Mixture, 500 mg/5 ml

USES

Sulfadimidine is an oral sulfonamide. Sulfadimidine is effective in the treatment of trachoma and lower urinary tract infections, and in the long-term prevention of rheumatic fever.

DOSAGES

Give a large initial dose, and then a smaller dose every six hours for two weeks.

	INITIAL DOSE	FOLLOW-UP DOSE
Adults and children 40 kg and over	3 g	1 g
Children		
30 to 40 kg	2 g	1 g
20 to 30 kg	1.5 g	750 mg
10 to 20 kg	1 g	500 mg
Under 10 kg	500 mg	250 mg

SIDE EFFECTS

Sulfadimidine can cause nausea, vomiting, loss of appetite, fever, and drowsiness.

	FIRST FOUR WEEKS	SECOND FOUR WEEKS	THIRD FOUR WEEKS
Adults and children 30 kg and over	25 mg twice weekly	50 mg twice weekly	100 mg twice weekly
Children			
12 to 30 kg	25 mg once weekly	25 mg twice weekly	50 mg twice weekly
Under 12 kg	10 mg once weekly	10 mg twice weekly	25 mg twice weekly

WARNING

Do not give sulfadimidine to patients who are jaundiced, to pregnant or breast-feeding women, or to newborns.

STORAGE

Store in airtight containers and protect from light.

PATIENT INSTRUCTIONS

1. This drug must build up in your blood. Take a large dose at first and then a smaller dose every six hours for two weeks.
2. Do not stop taking the drug when you start feeling better or improving. You must take it for a full two weeks. Otherwise, the germs will remain in your body.
3. The drug leaves your body in urine. It can block up the kidneys unless you drink an extra amount of water daily. Each day while you are taking the drug, drink at least six more glasses of water than you usually drink.
4. The drug can cause some side effects, including nausea, vomiting, loss of appetite, fever, and drowsiness. Continue to take the drug even if you develop these symptoms. If other problems develop, come back to the health center right away.
5. Keep this drug out of reach of children. Protect it from light.

DAPSONE (DDS)

FORM

Tablets, 25 mg and 100 mg

USE

Dapsone is used in the treatment of leprosy.

DOSAGES

Begin with a small dose and increase the dose at monthly intervals over a three to four month period.

SIDE EFFECTS

Dapsone may cause an allergic skin rash. Infrequently, it may cause nausea, vomiting, loss of appetite, headache, difficulty sleeping, and rapid heart rate. If the patient develops a skin rash, refer him to a hospital.

WARNING

When a patient with leprosy develops symptoms of a reaction, advise him to stop taking dapsone. Refer him to a hospital for further evaluation.

STORAGE

Store the drug at room temperature. Protect it from light.

PATIENT INSTRUCTIONS

1. Choose two times each week when you will be most certain to remember to take your leprosy drug. You must take this drug for many years without forgetting.
2. Treatment begins with a very small dose and increases each month until you are taking the full amount after four months.
3. Keep your drug in a place where children cannot reach it. The drug is poisonous if a lot is taken at one time. Protect it from light.
4. When you return to the health center, always bring your drug with you. Then we can count the pills and make sure that you are taking the correct amount.
5. The drug may cause some loss of appetite, nausea, vomiting, and headache. You may develop a skin rash. If a skin rash develops, come back to the health center immediately.

STREPTOMYCIN SULFATE**FORM**

Solution for injection, 500 mg/ml

USES

Streptomycin is effective in the treatment of tuberculosis, when used together with one or two additional drugs. Most frequently, isoniazid is one of the two drugs. Para-aminosalicylic acid or thiacetazone may be the other drug.

Streptomycin is also effective in the treatment of septic abortion and infections within the abdomen.

DOSAGES

In pulmonary tuberculosis, give streptomycin IM daily for the first eight to twelve weeks and then twice a week thereafter.

Adults

40 years and

over

Under 40 years

Children

750 mg

1 g

20 mg per kg body

weight up to a maximum

of 1 g

In treatment of severe bacterial infections, other than tuberculosis, give an injection every twelve hours for five to ten days.

Adults 500 mg per dose

Children 10 to 20 mg per kg body weight per dose

SIDE EFFECTS

Pain and irritation at the site of the injection are common. Rotate the site of injection for each shot.

WARNING

Do not give streptomycin to pregnant women. The drug will cause permanent damage to the ears of the fetus resulting in deafness in the newborn.

ringing in the ears and difficulty in maintaining body balance are symptoms of irritation of the nerves of the ear. Stop giving the drug immediately if these symptoms occur. Streptomycin can cause permanent damage to the ears.

STORAGE

Store between 15° and 30° C. Protect from freezing and from light.

PATIENT INSTRUCTIONS

1. Streptomycin may cause pain where it is injected. For this reason, you will receive the injection in a different muscle each time.
2. The drug can cause ringing in your ears. It can also make it difficult for you to keep your balance. If you notice these effects, report them immediately. You must stop receiving the injections.

FORMULARY

ISONIAZID (INH, Isonicotinic Acid Hydrazide)

FORM

Tablets, 50 mg and 100 mg

USE

Isoniazid is very useful in treatment of tuberculosis.

DOSAGES

Most commonly, the patient should take isoniazid once a day.

Adults 300 mg
Children 5 mg per kg body weight up to a maximum of 300 mg

Usually the patient must take the drug for at least twelve to eighteen months, or longer.

SIDE EFFECTS

Occasionally, isoniazid causes nausea, vomiting, and abdominal discomfort. In older or poorly nourished people, isoniazid may cause some nerve damage. The patient will have burning, tingling, or numbness in his hands and feet. Warn him of this. If these symptoms develop, refer the patient to a hospital.

WARNING

If you suspect that the patient has liver or kidney disease, refer him to a hospital before you begin treating him with isoniazid. If the patient develops any numbness or tingling in his hands and feet, refer him to a hospital.

STORAGE

Store in airtight containers. Protect from light.

PATIENT INSTRUCTIONS

1. For your body to destroy the tuberculosis germs, you must take this drug for the full time required.
2. Take this drug at the same time each day. This will help you to remember to take the drug.
3. Sometimes this drug may cause you to feel some numbness and tingling in your hands and feet. If this happens, come back to the health center right away.
4. Isoniazid may cause some nausea and vomiting. However, you must continue to take the drug in spite of these reactions.
5. Keep the drug out of reach of children. Protect the drug from light and moisture.

PARA-AMINOSALICYLIC ACID (Sodium Aminosalicylate, Sodium Para-Aminosalicylate, Sodium PAS)

FORM

Tablets, 500 mg

USE

In the treatment of tuberculosis, always give para-aminosalicylic acid with one or two other drugs in order to prolong its effectiveness.

DOSAGES

Give this drug in two doses daily, twelve hours apart. Tell the patient to take the drug during or shortly after a meal, or with some antacid. This will reduce its toxic effects.

Adults 6 g every twelve hours
Children 100 to 150 mg per kg body weight every twelve hours up to a maximum of 6 g

Usually, the patient must continue treatment for at least twelve to eighteen months.

SIDE EFFECTS

PAS often causes nausea, vomiting, and diarrhea. Advise the patient to take the drug with food or an antacid.

WARNING

PAS also can cause allergic symptoms such as fever and skin rash. If these symptoms develop, you must stop giving the drug and substitute another drug. Patients who are allergic to aspirin are likely to be allergic to PAS as well.

STORAGE

Store in an airtight container between 15° and 30° C.

PATIENT INSTRUCTIONS

1. You must take this drug twice a day. It often causes upset stomach and diarrhea. So take the drug with a meal or shortly after the meal. You may also take it with some antacid.
2. If other problems develop while you are taking this drug, come back to the health center right away.
3. Keep this drug out of reach of children. Keep it in a cool place and protect it from moisture.
4. Do not take aspirin while you are taking this drug. Aspirin will reduce the effect of this drug.

THIACETAZONE**FORM**

Tablets, 50 mg, 75 mg, and 100 mg

USE

Thiacetazone, used together with one or two additional drugs, is effective in the treatment of tuberculosis.

DOSAGES

Give thiacetazone once daily.

Adults 150 mg

Children 2 mg per kg body weight

The patient must continue to take this drug for twelve to eighteen months. If side effects develop, reduce the dosage. Then increase it again slowly over a two week period.

SIDE EFFECTS

Frequent side effects include loss of appetite, nausea, abdominal pain, headache, and dizziness. These effects often decrease after several weeks.

WARNING

Do not use thiacetazone in patients who have liver disease or jaundice.

More serious effects occur much less frequently. They include jaundice, liver problems, skin rashes, and severe anemia. The patient must stop taking the drug if these problems occur.

STORAGE

Store in airtight containers. Protect from light.

PATIENT INSTRUCTIONS

1. To help you remember to take this drug every day, take it at the same time each day. You must continue to take the drug for many months, even when you start to feel better.
2. Thiacetazone can cause you to lose your appetite, or to vomit or have stomach aches. It sometimes causes other symptoms, such as headache and dizziness. Often, these effects stop after several weeks. If you develop any of these problems, come back to the health center right away.
3. Keep this drug out of reach of children. Protect it from light and moisture.

ANTI-PROTOZOANS

METRONIDAZOLE (Flagyl)

FORM

Tablets, 250 mg

USES

Metronidazole is effective in the treatment of amebiasis, giardiasis, and trichomonal vaginitis.

DOSAGES

For treatment of amebiasis, instruct the patient to take 250 mg tablets of metronidazole three times a day for seven days.

Adults 500 mg (2 tablets)
three times a day

Children

15 kg or more	250 mg (1 tablet) three times a day
10 kg to 15 kg	187.5 mg (3/4 tablet) three times a day
6 kg to 10 kg	125 mg (1/2 tablet) three times a day
Under 6 kg	62.5 mg (1/4 tablet) three times a day

For treatment of giardiasis, instruct the patient to take metronidazole for seven days.

Adults and children
30 kg and over 250 mg three times a day

Children
15 kg to 30 kg 125 mg three times a day
Under 15 kg 125 mg twice a day

For treatment of trichomonal vaginitis, give both the female and her male partner the same dosage.

Adults 250 mg
three times a day for
seven days. Alternatively,
give 2 g in one dose

SIDE EFFECTS

Occasionally, metronidazole causes nausea, vomiting, abdominal pain, unpleasant taste in the mouth, headache, and skin rashes.

WARNING

Do not give metronidazole to pregnant women during the first three months of pregnancy.

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

1. Take this drug three times a day for one week. Keep taking the drug even when you think you are well. Otherwise, the problem will come back.
2. Do not drink any alcohol while you are using this drug. The alcohol, with this drug, may make you sick to your stomach, or cause headaches, pain in your stomach, and a hot feeling in your face.
3. Keep this drug out of reach of children.

MEPACRINE HYDROCHLORIDE (Quinacrine, Atabrine)

FORM

Tablets, 100 mg, scored

USE

Mepacrine hydrochloride is effective in the treatment of giardiasis.

DOSAGES

In the treatment of giardiasis, tell the patient to take the drug for seven days.

Adults and children
30 kg and over 100 mg three times a day
for seven days

Children
15 to 30 kg 50 mg three times a day
for seven days
Under 15 kg 50 mg twice a day for
seven days

SIDE EFFECTS

Mepacrine occasionally causes dizziness, headaches, and gastrointestinal symptoms. Rarely, it causes the skin to become yellow.

WARNING

None

STORAGE

Store in an airtight container and protect from light.

PATIENT INSTRUCTIONS

1. Take this drug in the morning, at noon, and in the evening. Continue to take it for one week. Do not stop taking the drug even if you begin to feel better.
2. This drug sometimes causes dizziness, headaches, and upset stomach. Continue to take the drug in spite of these reactions.
3. Keep the drug out of reach of children. Protect it from light and moisture.

QUININE DIHYDROCHLORIDE

FORM

Sterile solution for infusion

USE

Quinine dihydrochloride is rapidly effective when given intravenously to patients with malignant malaria.

DOSAGES

- Adults 600 mg, diluted in 500 ml of normal saline and given over thirty to sixty minutes
- Children 10 mg per kg body weight, diluted in 300 ml of normal saline and given over thirty to sixty minutes

You may repeat the dosage every twelve hours until the patient's condition improves.

SIDE EFFECTS

Quinine will damage the blood vessels and tissues. Be very careful to make certain that the needle remains in the blood vessel.

Repeated doses of quinine may cause ringing in the ears, headache, nausea, abdominal pain, skin rash, and vision problems. Some patients may develop these symptoms with smaller doses.

WARNING

Do not give quinine to patients who have reacted to the drug previously. Given intravenously, quinine may cause a rapid drop in blood pressure. It will also decrease respirations. Watch your patient carefully. Slow the rate of infusion if these signs occur.

STORAGE

Protect from light.

PATIENT INSTRUCTIONS

Quinine may cause ringing in the ears, headache, nausea, abdominal pain, problems with

vision, and skin rashes. These reactions are more likely to occur if you have received the drug before.

CHLOROQUINE PHOSPHATE

FORMS

- Tablets, 250 mg
Sterile solution in water for injection, 65 mg/ml

USE

Chloroquine phosphate is effective in the treatment and suppression of malaria.

DOSAGES

For treatment of an acute attack of malaria, give a large initial dose of chloroquine. Give a second dose in six hours. Then give a single dose daily for the next four days.

	INITIAL DOSE	SIX HOURS LATER	DAILY FOR NEXT FOUR DAYS
Adults and children 40 kg and over	1 g	500 mg	500 mg
Children 20 to 40 kg	500 mg	250 mg	250 mg
10 to 20 kg	250 mg	125 mg	125 mg

When the patient is vomiting and unable to take chloroquine by mouth, give the drug to adults by intramuscular injection. Give the drug to children subcutaneously.

- Adults 5 ml
Repeat every six hours for twenty-four hours, if necessary.
- Children 0.25 ml per kg body weight subcutaneously. Repeat one time only if necessary.

Also give chloroquine for prevention of an attack of malaria, and to suppress attacks when the patient has had malaria.

- Adults and children 40 mg and over 500 mg weekly
- Children 20 to 40 kg 250 mg weekly
10 to 20 kg 125 mg weekly

FORMULARY

SIDE EFFECTS

Occasionally, chloroquine causes nausea, vomiting, abdominal cramps, headache, and skin rashes.

WARNING

Do not give chloroquine to pregnant women unless the risk of malaria is great. This drug can damage the eyes and ears of the fetus.

Overdosage in children or with intravenous injection may cause headache, drowsiness, decreased respiratory and heart rates, and shock, followed by death.

STORAGE

Protect from light.

PATIENT INSTRUCTIONS

1. Chloroquine tastes very bitter. Take the drug with sugar or honey or other sweet food to hide the taste.
2. Chloroquine is a dangerous drug if a large amount is taken at one time. Keep the drug out of reach of children.
3. Chloroquine can cause nausea, vomiting, stomach cramps, headache, and rashes. However, keep taking the drug even if these reactions occur.

ANTI-FUNGAL

GRISEOFULVIN

FORM

Tablets, 125 mg and 250 mg

USE

Griseofulvin is for use in patients with fungus infections that cannot be cured with antifungal ointments.

DOSAGES

You must treat the patient with griseofulvin for at least three weeks.

Adults 500 mg once a day

Children

6 to 12 years

of age 250 mg once a day

Under 6 years

of age 125 mg once a day

SIDE EFFECTS

Occasionally, griseofulvin causes skin rash, headache, dry mouth, and gastrointestinal

symptoms. These are rarely severe enough to require the patient to stop taking the drug.

WARNING

Do not give this drug to patients with liver disease.

STORAGE

Store in airtight containers.

PATIENT INSTRUCTIONS

1. This infection will take a long time to cure. You must take this drug once a day for a month or longer. Do not stop taking the drug before then, even if the rash improves.
2. The drug may cause skin rash, headache, and upset stomach. However, you must continue to take the drug in spite of these reactions.
3. Keep the drug out of reach of children. Protect it from moisture.

GASTROINTESTINAL DRUGS

Antacids

ALUMINA AND MAGNESIA

FORMS

Oral suspension
Tablets

USES

Antacids are usually mixtures of aluminum and magnesium hydroxides. These substances help to destroy the effect of stomach acids. In conditions such as peptic ulcer and heartburn, high acid levels in the stomach damage the lining of the stomach and cause pain and other problems. Antacids reduce the damage by neutralizing the acid.

DOSAGES

Levels of stomach acid are highest about one hour after meals. The stomach also produces acid during the night. Whenever the stomach is empty, the gastric acid will cause irritation. Tell the patient to take at least 15 to 30 ml of antacid one hour after meals. Tell him to take antacids at bedtime, and up to three to four times during the day when he feels pain or discomfort. He may have to take a larger dose of antacid to obtain relief, because the amount of acid that each person produces will vary. The oral suspension works more rapidly. However, the patient can suck on the tablets to help dissolve them. This will prolong the effect of the antacid.

SIDE EFFECTS

Sometimes an antacid will cause diarrhea. Sometimes it will cause constipation.

WARNING

Antacids interfere with the absorption of some other drugs, when taken at the same time. Check to make sure that the patient is not taking one of the drugs that the antacid will affect. These drugs include oral penicillin V, tetracycline, ferrous sulfate, isoniazid, sulfadiazine, and sulfadimidine.

STORAGE

No special requirements

PATIENT INSTRUCTIONS

1. This drug helps to keep your stomach acids from irritating the lining of your stomach and causing pain and heartburn.
2. Take the drug about one hour after meals, and from one to two hours before meals. Take it also at bedtime. These are the times when you are most likely to feel burning from the stomach acid. Take three to four teaspoons each time. However, if necessary, you may use more of the drug to relieve the pain.
3. This drug may cause either diarrhea or constipation. If you become constipated, take some mineral oil to soften your stool. Or reduce the amount of the drug you are taking.
4. Keep the drug out of reach of children.

Emetic Agent

IPECAC SYRUP

FORM

Syrup

USE

Ipecac syrup is used to cause vomiting, as a way of emptying the stomach in cases of poisoning.

DOSAGES

Give adults 20 to 30 ml, followed by at least two glasses of water. Repeat in twenty minutes if the patient has not vomited.

Give children 15 ml, followed by a glass of water. Repeat in twenty minutes if the patient has not vomited.

SIDE EFFECTS

None

WARNING

Do not use ipecac syrup in patients who are unconscious or in shock. Do not confuse ipecac syrup with ipecac fluid extract or tincture of ipecac. The latter are more concentrated and dangerous to use in large doses.

STORAGE

Store in a cool place, in airtight containers. Protect from light.

PATIENT INSTRUCTIONS

1. This drug should make you vomit within twenty minutes. If it does not, you will receive another dose. You must empty your stomach as quickly as possible.
2. Keep the drug out of reach of children.

Anti-Hemorrhoidal Agents

LIGNOCAINE AND HYDROCORTISONE RECTAL SUPPOSITORY

FORM

Suppository for rectal use

USES

Lignocaine and hydrocortisone suppositories can relieve pain in patients with hemorrhoids or anal fissures.

DOSAGES

Tell the patient to insert one suppository three or four times a day, after a bowel movement.

SIDE EFFECTS

None

WARNING

None

STORAGE

Store at room temperature. Protect from heat and sun.

PATIENT INSTRUCTIONS

1. Remove the wrapper from the suppository. Moisten the suppository. Use your little finger to push the suppository up into your rectum.
2. Use the suppository after a bowel movement. Use up to four suppositories a day while you are having severe pain. Do not continue to use them when the pain subsides.
3. Keep the drug out of reach of children.

MINERAL OIL (Liquid Petrolatum)

FORM

Liquid

USES

Mineral oil, taken by mouth, will soften the stool in patients with constipation or painful rectal conditions.

DOSAGES

Between 10 and 30 ml of mineral oil, one time daily, is usually sufficient to soften the stools.

SIDE EFFECTS

Mineral oil can interfere with the absorption of certain foods. For this reason, you should encourage patients to stop using mineral oil as soon as possible.

WARNING

None

STORAGE

Protect from light.

PATIENT INSTRUCTIONS

1. Mineral oil will help to soften your stool so that you can move your bowels more frequently and so that the bowel movement will cause less discomfort.
2. Drink more fluids each day to help soften your stool. Always move your bowels when you feel the urge to do so. As soon as your stools become soft and the pain in your rectum decreases, begin to reduce the amount of mineral oil that you are taking, so that you can completely stop taking it.
3. Keep mineral oil out of reach of children.

Laxative

MAGNESIUM SULFATE CRYSTALS

FORM

Crystals

USE

Magnesium sulfate is used to clear the bowels

FORMULARY

of the worms after the patient has taken worm drug. It acts within one to two hours. Magnesium sulfate is not absorbed from the intestines. It draws water into the intestines. This rapidly leads to a large, liquid bowel movement.

DOSAGES

Adults 15 g dissolved in 240 ml of water
Children 5 to 10 g dissolved in 120 ml of water

SIDE EFFECTS

None

WARNING

In children with a heavy load of intestinal worms, the intestines may be so severely damaged that they allow magnesium sulfate to enter the blood stream and poison the child. Signs and symptoms of this poisoning include twitching of the face, thirst, a drop in blood pressure, and decreased respiration. If you suspect a heavy load of intestinal worms, reduce the dosage in children.

STORAGE

Store in an airtight container in a cool place.

PATIENT INSTRUCTIONS

1. Mix the crystals in a glass of water and drink the mixture. It will taste bitter. You will have a large, watery bowel movement within one to two hours.
2. Keep the drug out of reach of children.

Replacement Solution

ORAL REHYDRATION POWDER

FORM

Powder in packets, containing
3.5 g sodium chloride

2.5 g sodium bicarbonate
1.5 g potassium chloride
20.5 g glucose

Mix one package of powder with one liter of freshly boiled water.

USES

Give oral rehydration fluid to patients who are having diarrhea and who may become dehydrated, or who have become dehydrated.

DOSAGES

Give the fluid by spoon and cup to small infants. Give the child as much fluid as he will take. The least amount of rehydration fluid that a child should drink over the first two hours equals his weight in kg times 20 ml. Continue to give the child at least one cup of fluid for every stool that he has.

If no packets of oral rehydration powder are available, boil one liter of water. While the water is cooling, add one two-finger pinch of salt and one two-finger pinch of baking soda plus two fistfuls of sugar. When the water has cooled, use the fluid in the same way as you would use oral rehydration fluid.

SIDE EFFECTS

None

WARNING

None

STORAGE

Protect from moisture.

PATIENT INSTRUCTIONS

None

RESPIRATORY TRACT DRUGS

Bronchodilators

AMINOPHYLLINE (Theophylline Ethylenediamine Compound)

FORM

Tablets, 100 mg

USES

Aminophylline helps to relieve wheezing in patients with asthma. Aminophylline reduces muscle spasms in the bronchioles of the lungs.

DOSAGES

Give aminophylline every six hours, or four times a day to prevent asthma attacks and to help control mild attacks of asthma.

Adults and children 40 kg and over	200 mg
Children 20 to 40 kg	100 mg
10 to 20 kg	50 mg

SIDE EFFECTS

Aminophylline may cause stomach irritation, nausea, vomiting, nervousness, and headaches.

WARNING

Use aminophylline cautiously in patients with heart disease.

STORAGE

Store in airtight containers and protect from light.

PATIENT INSTRUCTIONS

1. This drug will help to prevent you from getting wheezing attacks. It will also help you to get over an attack that has started.
2. Always take the drug with a glass of water. Drink lots of fluids.
3. This drug can cause stomach irritation, nausea, and vomiting. You may wish to take the drug with a little food. The drug can also cause headaches and a feeling of nervousness.
4. Keep the drug where children cannot reach it.

EPINEPHRINE (Adrenaline)

FORM

Injection, 1 mg/ml, 1:1000 solution

USES

Epinephrine is very effective in the treatment of acute attacks of asthma. It is also life-saving in patients with severe allergic reactions and anaphylactic shock.

DOSAGES

Inject epinephrine subcutaneously.

Adults and children 40 kg and over	0.5 cc
Children 20 to 40 kg	0.3 cc
10 to 20 kg	0.2 cc
10 kg and under	0.1 cc

Repeat this dose every fifteen to thirty minutes for three to four times, if necessary, in order to control wheezing or to reverse allergic reactions.

SIDE EFFECTS

Epinephrine causes restlessness, anxiety, headache, rapid heart rate, and pounding of the heart.

WARNING

Measure and record the patient's pulse rate before each dose. Do not repeat the dose if the pulse rate is over 160 beats per minute.

STORAGE

Protect from light. Discard if solution is brown or discolored.

PATIENT INSTRUCTIONS

This drug may cause you to become restless and anxious. You may feel your heart pounding rapidly. You may develop a headache.

Cough Expectorant

GLYCERYL GUAIACOLATE (Guaiphenesin)

FORMS

Syrup, 100 mg/5 ml
Capsules, 200 mg

FORMULARY

USE

Glyceryl guaiacolate may be useful in reducing the discomfort of cough.

DOSAGES

Adults 100 to 200 mg every three to four hours for cough

Children 50 to 100 mg every three to four hours for cough

SIDE EFFECTS

None

WARNING

None

STORAGE

Store in airtight containers.

PATIENT INSTRUCTIONS

1. Drink a lot of water or other liquid with this drug. The water will help to make the drug more effective in soothing your cough.
2. Keep this drug out of the reach of children.

REPLACEMENT SOLUTIONS

DEXTROSE, 5% IN WATER

FORM

Solution for IV infusion, 1 liter

USE

Give this solution to patients who are unable to take sufficient fluid by mouth to meet their daily water requirement. The dextrose provides some energy for the body. However, this solution provides no minerals.

DOSAGES

Use the first table below to guide you in estimating how much intravenous fluid the patient needs in twenty-four hours. If the patient needs normal saline, Ringer's lactate, or 5% dextrose in 1/2 normal saline, give the recommended amount. Subtract this amount from the total ml of fluid. Give the remaining ml of fluid as 5% dextrose in water.

SIDE EFFECTS

None

WARNING

Too large an infusion of intravenous solution can lead to heart failure. Always watch the patient carefully for swelling, especially around the eyes.

STORAGE

Store in airtight containers below 25°C.

PATIENT INSTRUCTIONS

When these fluids are given directly into a blood vessel, they will help to replace the fluids your body has lost.

DEXTROSE, 5% IN 1/2 NORMAL SALINE

FORM

Solution for IV infusion, 1 liter

USES

This solution provides half as much sodium as the normal saline solution. It is useful to maintain a patient's water balance when he has not lost blood or large volumes of water from diarrhea, vomiting, or burns.

DOSAGES

Use the second table below to guide you in estimating how much intravenous fluid the patient needs in twenty-four hours. Give the recommended amount of 5% dextrose in 1/2 normal saline. Subtract this amount from the total ml of fluid. Give the remaining ml of fluid as 5% dextrose in water.

BODY WEIGHT	TOTAL ML OF FLUID	ML OF NORMAL SALINE OR RINGER'S LACTATE	ML OF 5% DEXTROSE IN 1/2 NORMAL SALINE
60 kg	2500 ml	500 ml	1000 ml
45 kg	1800 ml	350 ml	700 ml
30 kg	1500 ml	250 ml	500 ml
15 kg	1000 ml	175 ml	350 ml
10 kg	800 ml	140 ml	280 ml
5 kg	600 ml	120 ml	240 ml
2.5 kg	400 ml	100 ml	200 ml

BODY WEIGHT	TOTAL ML OF FLUID	ML OF 5% DEXTROSE IN 1/2 NORMAL SALINE
60 kg	2500 ml	1000 ml
45 kg	1800 ml	700 ml
30 kg	1500 ml	500 ml
15 kg	1000 ml	350 ml
10 kg	800 ml	280 ml
5 kg	600 ml	240 ml
2.5 kg	400 ml	200 ml

FORMULARY

SIDE EFFECTS

None

WARNING

Too large an infusion of intravenous solution can lead to heart failure. Always watch the patient carefully for swelling, especially around the eyes.

STORAGE

Store in airtight containers below 25°C.

PATIENT INSTRUCTIONS

When these fluids are given directly into a blood vessel, they will help to replace the fluids your body has lost.

NORMAL SALINE (Sodium Chloride 0.9%, Isotonic Saline)

FORM

Solution for IV infusion, 1 liter

USES

This solution contains approximately the same concentration of sodium as is found in the blood and in the fluids that are lost during diarrhea or vomiting. Use normal saline in emergencies to replace blood loss, and in fluid loss during diarrhea, when the patient cannot take sufficient fluids by mouth. A smaller amount of normal saline solution is required to replace the sodium that the body loses daily in the urine.

DOSAGES

Use the following table to guide you in estimating how much intravenous fluid the patient needs in twenty-four hours. Give the recommended amount of normal saline. Subtract this

amount from the total ml of fluid. Give the remaining ml of fluid as 5% dextrose in water.

SIDE EFFECTS

None

WARNING

Too large an infusion of intravenous solution can lead to heart failure. Always watch the patient carefully for swelling, especially around the eyes.

STORAGE

Store in airtight containers below 25° C.

PATIENT INSTRUCTIONS

When these fluids are given directly into a blood vessel, they will help to replace the fluids your body has lost.

RINGER'S LACTATE

FORM

Solution for IV infusion, 1 liter

USES

Ringer's lactate solution is the preferred replacement solution in patients who require intravenous fluids for treatment of severe dehydration. You may also use it as replacement fluid when the patient is in shock and when he has suffered burns.

DOSAGES

Use the following table to guide you in estimating how much intravenous fluid the patient needs in twenty-four hours. Give the recommended amount of Ringer's lactate. Subtract this amount from the total ml of fluid. Give the remaining ml of fluid as 5% dextrose in water.

BODY WEIGHT	TOTAL ML OF FLUID	ML OF NORMAL SALINE OR RINGER'S LACTATE
60 kg	2500 ml	500 ml
45 kg	1800 ml	350 ml
30 kg	1500 ml	250 ml
15 kg	1000 ml	175 ml
10 kg	800 ml	140 ml
5 kg	600 ml	120 ml
2.5 kg	400 ml	100 ml

SIDE EFFECTS

None

WARNING

Too large an infusion of intravenous solution can lead to heart failure. Always watch the patient carefully for swelling, especially around the eyes.

STORAGE

Store in airtight containers below 25° C.

PATIENT INSTRUCTIONS

When these fluids are given directly into a blood vessel, they will help to replace the fluids your body has lost.

GLUCOSE, 50% SOLUTION

FORM

Solution, 50 ml vials

USE

You may give glucose 50% solution intravenously to patients in whom you suspect low blood sugar is the cause of coma.

DOSAGE

Infuse 20 ml of this solution rapidly. If low blood sugar is responsible for the patient's symptoms, improvements should occur within five to ten minutes.

SIDE EFFECTS

None

WARNING

Be careful to infuse the solution directly into the blood vessel. If the solution leaks into the

surrounding tissue, it will cause irritation and pain.

STORAGE

Store in airtight containers in a cool place.

PATIENT INSTRUCTIONS

This solution has a lot of sugar in it. It will help you feel better if your blood does not have enough sugar in it right now.

Other

STERILE WATER FOR INJECTION

FORMS

Vials, 2 ml and 10 ml

USES

Use sterile water for injection for preparation of medicines that must be given by injection.

DOSAGE

Use the quantity of sterile water specified for proper dilution of the drug you are preparing for injection.

SIDE EFFECTS

None

WARNING

Never inject sterile water directly, because it will cause the destruction of red blood cells.

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

None

VACCINES

BCG VACCINE (Bacillus Calmette-Guerin)

FORM

Multi-dose vial

USES

BCG vaccine protects against tuberculosis. It provides active immunity against the natural disease.

DOSAGES

You can give BCG vaccine to a child anytime from birth to age fourteen. Give 0.1 ml intradermally. Give newborns 0.05 ml. Always give BCG on the outer side of the right shoulder. In this way, others can check for a scar there and know that the patient has received BCG vaccine and that it was effective.

A pus filled blister should develop over the injection site. This blister is called a pustule. The pustule drains for many weeks. Do not cover the pustule.

Sometimes no pustule forms when you give a BCG immunization. The pustule does not drain. This means that the immunization has not been effective. The body is not making antibodies. Give the child another BCG injection.

Follow the national guidelines of your country for giving a second BCG vaccination to children entering school.

SIDE EFFECTS

An ulcer may develop at the vaccination site. Swelling and tenderness of the lymph glands may occur under the arm.

WARNING

Do not give BCG vaccine within one month of giving measles or polio vaccine. Do not give BCG vaccine to anyone with active tuberculosis or to anyone who is under treatment with steroid drugs.

STORAGE

After you have reconstituted BCG vaccine with sterile water, use it within two hours. Discard what you have not used. Store freeze-dried BCG between 2° and 10° C. Protect from freez-

ing. These recommendations are not a substitute for the package insert included with each vaccine.

PATIENT INSTRUCTIONS

1. This shot will help to protect you (your child) from tuberculosis.
2. A small red lump will develop at the place where the shot was given. The lump will develop within three to six weeks. The lump should form a blister with a crust on it. Swelling under the arm may also occur.
3. If no blister develops, then the shot has not worked. You must return to the health center for another injection.
4. The sore may last for several months. It will leave a scar that will last for many years.

DPT VACCINE (Triple Vaccine; Diphtheria, Pertussis, and Tetanus Vaccine)

FORMS

Suspension for injection, multi-dose vials

USES

DPT vaccine combines the vaccines for diphtheria, whooping cough, and tetanus. D is for diphtheria. P is for pertussis, or whooping cough. T is for tetanus.

DOSAGES

Give a series of four DPT injections to all children under six years of age. Give the first three DPT shots at least two months apart. For example, give the first shot at three months, the second at five months, and the third at seven months. Give the fourth shot approximately one year after the third shot.

Give 0.5 ml to 1.0 ml, depending on the instructions on the label. Give the injection in the muscle of the front upper outer thigh in infants or in the muscle of the back of the hip in children who can walk.

SIDE EFFECTS

The injection site may become tender and swollen. DPT vaccine also causes irritability, fever, loss of appetite, and occasional vomiting.

WARNING

Do not give DPT vaccine to an infant who is ill with an acute infectious disease such as a viral upper respiratory infection.

After age five or six, a child is no longer at great risk of becoming ill with whooping cough. Whooping cough vaccine also tends to make older children and adults sick. Therefore, do not give DPT vaccine to children after age five or six.

STORAGE

Store between 2° and 10° C and protect from freezing. Protect from light. These recommendations are not a substitute for the package insert included with each vaccine.

PATIENT INSTRUCTIONS

1. This injection will help to protect your child from three very common illnesses. They are diphtheria, whooping cough, and tetanus.
2. Your child must have a total of four injections in order to be protected from these illnesses. Please return for the other injections as directed.
3. This injection will sometimes cause your child to develop a fever and become irritable. He may lose his appetite and vomit. However, these effects should not last more than a few hours. The injection site may become painful and swollen. However, the pain and swelling should go away in one to two days. If the pain and swelling have not gone away after two days, return to the health center.

DT VACCINE (Adsorbed Diphtheria and Tetanus Vaccine)**FORM**

Solution for injection

USES

DT vaccine provides active immunization against diphtheria and tetanus in individuals who are allergic to the pertussis part of the DPT vaccine. It is also for use in individuals over the age of five years.

DOSAGES

Give a DT vaccination when a child enters primary school. Give 0.5 to 1.0 ml, intramuscularly or deep subcutaneously, depending upon the instructions of the manufacturer.

SIDE EFFECTS

Local pain and tenderness occur occasionally at the vaccination site.

WARNING

None

STORAGE

Store between 2° and 10° C. Avoid freezing. Protect from light. These recommendations are not a substitute for the package insert included with each vaccine.

PATIENT INSTRUCTIONS

1. This injection will help to protect you (your child) from both diphtheria and tetanus.
2. You may have some pain and swelling at the place where the vaccine was injected. However, the pain and swelling should not last for more than one to two days. If the pain and swelling last more than two days, return to the health center.

MEASLES VACCINE**FORM**

Dried vaccine with diluent

USE

Measles vaccine provides active immunization against measles.

DOSAGES

Give 0.5 ml IM or SC when the child is nine to twelve months old. If given before nine months, repeat the immunization after the child is one year of age.

SIDE EFFECTS

Skin rash occurs frequently. Fever, beginning five to ten days after the immunization and lasting one to two days, is frequent. Bronchitis and red eyes and throat occur occasionally.

WARNING

Do not give measles vaccine to persons with active tuberculosis. Do not give it to pregnant women. Do not give it to children who are suffering from acute respiratory infections.

Chemicals and antiseptics easily destroy measles vaccine. Take great care to keep the vaccine out of contact with these substances during sterilization of syringes and needles, and during cleansing of the skin before immunization.

FORMULARY

STORAGE

When frozen or stored below 10° C, the dried vaccine should remain active for up to one year. Use the vaccine immediately after you have added the diluent. These recommendations are not a substitute for the package insert included with each vaccine.

PATIENT INSTRUCTIONS

1. This injection will protect your child from becoming ill with measles.
2. Your child may develop some of the symptoms of measles in five to ten days. These symptoms include fever, a skin rash, red eyes, and coughing. However, these effects will last only for one to two days.

POLIOMYELITIS VACCINE

FORM

Suspension for oral use

USE

Poliomyelitis vaccine provides active immunization against poliomyelitis.

DOSAGES

Give two to three drops by mouth according to the instructions on the label. Give polio vaccine when you give DPT vaccine at three, five, seven, and eighteen months of age. Give polio vaccine when you give DT vaccine at age five or six.

SIDE EFFECTS

None

WARNING

Do not give polio vaccine to children with fever or gastrointestinal illness.

Do not give polio vaccine two hours before or two hours after the child receives breast milk.

STORAGE

When stored at 0° to 4° C, poliomyelitis vaccine remains active for three months. These recommendations are not a substitute for the package insert included with each vaccine.

PATIENT INSTRUCTIONS

1. These drops will help to protect your child from becoming ill with polio.

2. Do not give your child breast milk for at least two hours before and after he receives these drops. If you do, then the drops will be destroyed and will not protect your child from polio.

TETANUS TOXOID (Adsorbed Tetanus Vaccine, Adsorbed Tetanus Toxoid)

FORM

Solution for injection

USE

Tetanus toxoid provides active immunization against tetanus.

DOSAGES

Give 0.5 to 1.0 ml per dose, depending on the instructions of the manufacturer. Generally, give three doses. Give the second six to twelve weeks after the first. Give the third six to twelve months after the first.

To prevent tetanus of the newborn, give every pregnant woman a series of two injections at a four to six week interval during the third trimester.

SIDE EFFECTS

Local redness and swelling occur occasionally at the injection site.

WARNING

None

STORAGE

Store at 2° to 10°. Protect from light. Protect from freezing. These recommendations are not a substitute for the package insert included with each vaccine.

PATIENT INSTRUCTIONS

1. This injection will help to protect you from becoming ill with tetanus. Be sure that you receive a second and third shot if you have not had them before.
2. You may have some pain and swelling at the place where the vaccine was injected. The pain and swelling should go away in one to two days. If the pain and swelling last longer than two days, return to the health center.

DRUGS ACTING ON THE HEART

Anti-Anginal

GLYCERYL TRINITRATE (Nitroglycerin)

FORM

Tablets, 0.4 mg

USE

Glyceryl trinitrate is effective in reducing the pain in attacks of angina pectoris.

DOSAGES

A total of 0.4 mg to 1.2 mg under the tongue should provide relief during an attack of angina pectoris.

SIDE EFFECTS

Glyceryl trinitrate causes flushing and a warm feeling in the face, throbbing headache, nausea, and vomiting.

WARNING

This drug loses its effectiveness very rapidly. If the drug does not bring pain relief, obtain a new supply.

STORAGE

Store in the original glass container in a cool place. Keep tightly closed. Obtain a fresh supply every six months. The drug loses its strength in six to twelve months and will fail to give relief.

PATIENT INSTRUCTIONS

1. Take these tablets with you wherever you go.
2. Whenever you suddenly develop chest pain, stop whatever you are doing, sit down, and relax. Place one tablet under your tongue and let it dissolve.
3. If the pain continues for more than one to two minutes after you have taken one tablet, place a second tablet under your tongue. You may take a third tablet if necessary. However, do not take more than three tablets.
4. If the pain continues, then more tablets will not help. You may be suffering from a heart attack.

5. Keep the drug in an airtight container. Keep it out of reach of children. Keep it in a cool place away from light. Keep it out of contact with cotton. Replace the drug approximately once a month, because it loses its effectiveness rapidly.

Diuretic

HYDROCHLOROTHIAZIDE (Esidrex, Hydrodiuril)

FORM

Tablets, 25 mg and 50 mg

USES

In cases of congestive heart failure, hydrochlorothiazide is used to rid the body of excess water. It is also used to lower blood pressure in patients with mild to moderate hypertension.

DOSAGES

Start the patient on 25 mg of hydrochlorothiazide twice a day. If he has swelling of his ankles, the drug may help to reduce the swelling. Try to reduce the amount of drug to 25 mg every other day as the patient's condition improves. When the patient has severe swelling of his ankles or fluid in his lungs from congestive heart failure, he may require up to 100 mg twice a day for one to two days.

SIDE EFFECTS

Hydrochlorothiazide causes loss of potassium from the body. Symptoms of low body potassium include weakness, tiredness, muscle cramps, and thirst. In addition, the drug sometimes causes skin rash, upset stomach, headache, dizziness, and weakness. However, these side effects are rare.

WARNING

If the patient's swelling or shortness of breath does not improve in twenty-four to forty-eight hours, refer him to a hospital for further care.

STORAGE

Store in airtight containers.

PATIENT INSTRUCTIONS

1. This drug causes your body to get rid of extra water through the urine. You should take only enough of the drug to get the proper effect from it.
2. Take 25 mg to 50 mg in the morning and in the late afternoon. If you take the drug at bedtime, you will have to rise within two to three hours to pass your urine.
3. As quickly as possible, you must reduce the total amount that you take of this drug. 25 mg every other day would be best.
4. This drug causes your body to lose an important mineral, potassium. You must replace the potassium by eating some food each day that contains it. Oranges, bananas, spinach, tomatoes, potatoes, peas, beans, and milk are all good sources of potassium.
5. Keep this drug out of reach of children.

Other

DIGOXIN

FORM

Tablets, 125 micrograms and 250 micrograms

USE

Digoxin is a form of digitalis. It is effective in the treatment of patients with congestive heart failure.

DOSAGES

Usually, a doctor at a hospital will start the patient on digoxin. When the patient has not received digoxin previously, or within the previous two weeks, and is suffering from congestive heart failure, he will require a total of up to 1.5 mg of digoxin over twenty-four hours. Give this amount in three divided doses, six to eight hours apart.

The total daily dose, after the initial large amount, is between 125 micrograms and 500 micrograms, as a single daily dose.

SIDE EFFECTS

Too much digoxin may cause the heart rate to fall below sixty beats per minute. The heart beat may become irregular. The patient may feel sick to his stomach, vomit, and develop a headache.

If the patient is not taking enough digoxin, he will have the signs and symptoms of heart failure. These include a rapid heart rate, collection of fluid in the lungs, and swelling of the legs and ankles.

WARNING

When the patient is taking hydrochlorothiazide in addition to digoxin, he must obtain extra potassium. He may do this by eating foods that contain potassium. Otherwise, he will lose potassium from his body and suffer from toxic effects of digoxin more rapidly.

STORAGE

Store in airtight containers.

PATIENT INSTRUCTIONS

1. This drug will help your heart to pump more strongly. You must remember to take the drug every day. You must plan to take it for the rest of your life.
2. Too much of this drug can cause side effects. Return to the health center if you develop nausea, vomiting, loss of appetite, headache, a very slow heart rate, or an irregular heart rate.
3. Return to the health center if you have increased difficulty breathing, especially at night. Return if you notice more swelling of your legs. This swelling means that the drug is not having the proper effect.
4. Keep this drug out of reach of children.

DRUGS ACTING ON THE SKIN AND MUCOUS MEMBRANES

Drug that Shrinks Mucous Membranes

PHENYLEPHRINE HYDROCHLORIDE (Neo-synephrine Hydrochloride)

FORM

Nasal solution, 0.25%

USE

Phenylephrine is used to drain the sinuses and relieve congestion. When instilled into the nose, phenylephrine makes the mucous membranes shrink and reduces the secretions. Ephedrine nasal drops have almost the same effect as phenylephrine.

DOSAGES

Two to three drops in each nostril every three to four hours will provide some relief from nasal congestion. Do not continue for more than three days.

SIDE EFFECTS

After the drops shrink the membranes and decrease congestion, the membranes often begin to swell. Warn the patient of this effect.

WARNING

None

STORAGE

Store in an airtight container. Protect from light. Discard if the solution becomes discolored.

PATIENT INSTRUCTIONS

1. Put two or three drops in each nostril to help you breathe more easily through your nose. However, do not use the drops more than four or five times a day, or for more than three days. The drops can damage your nose if you use them for longer than three days.
2. Keep this drug out of reach of children. Do not expose it to light. Throw the solution out if it is not clear.

Antiseptic Solutions

POVIDONE-IODINE, 10% SOLUTION

FORM

Solution, 10%, equivalent of 1% available iodine

USES

Use povidone-iodine as a skin disinfectant and for hand scrub before putting on sterile gloves.

DOSAGES

Apply to the skin vigorously with gauze or cotton balls to remove bacteria.

SIDE EFFECTS

None

WARNING

None

STORAGE

Store in an airtight container. Protect from light.

PATIENT INSTRUCTIONS

This solution helps to eliminate germs from your skin. Scrub your skin with the solution for a few minutes each time.

HYDROGEN PEROXIDE, 3% SOLUTION (Dilute Hydrogen Peroxide Solution, "10 Volume")

FORM

Solution, 3%

USES

Hydrogen peroxide is effective in destroying bacteria when applied to wounds, ulcers, and contaminated skin. It is also effective as a mouthwash in patients with gingivitis. It softens ear wax. And it helps to remove adherent bandages.

FORMULARY

DOSAGES

Use the 3% solution as a disinfectant on the skin. Tell the patient to dilute the solution with one part water to one part hydrogen peroxide 3% solution for use as mouthwash or ear drops.

SIDE EFFECTS

None

WARNING

Hydrogen peroxide is not intended for internal use except when diluted as a mouthwash.

STORAGE

Store in a dark glass bottle with a glass stopper. Protect from light and keep tightly closed. Store in a cool place.

PATIENT INSTRUCTIONS

1. For use as a mouthwash, dilute this drug with an equal amount of water. Rinse your mouth with the solution two to three times a day.
2. To fight infection in skin injuries, apply this drug directly to the injury. It will help the injury to heal properly.

Anti-Inflammatory

HYDROCORTISONE, 1% OINTMENT

FORM

Ointment, 1%

USES

Hydrocortisone 1% ointment is used to reduce itching, swelling, and discomfort in patients with eczema and contact dermatitis.

DOSAGES

Apply a very thin layer of ointment twice a day and rub into the skin thoroughly.

SIDE EFFECTS

None

WARNING

Do not use hydrocortisone ointment in the eyes. Do not apply it to skin rashes caused by viruses, such as canker sores or chicken pox.

STORAGE

Store at room temperature. Protect from light.

PATIENT INSTRUCTIONS

1. Put a small amount of ointment on your skin. Then rub it thoroughly into the skin.
2. Do not put this ointment on areas of skin that are wet or weeping. First dry the skin by using cold wet soaks for as long as necessary.
3. Keep this drug out of reach of children. Store it in a cool place and protect it from light.

Anti-Fungals

GENTIAN VIOLET, 1% SOLUTION

FORM

Solution, 1%

USE

Gentian violet is effective in the treatment of oral thrush.

DOSAGES

Paint gentian violet 1% solution on the white patches three times a day until they clear up.

SIDE EFFECTS

Gentian violet may rarely cause nausea, vomiting, diarrhea, and ulceration of mucous membranes. The solution stains clothing and skin.

WARNING

None

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

1. This drug will help to get rid of the white patches in your mouth. Paint the drug onto the patches three times a day until the patches have disappeared.
2. If you swallow too much of this drug, it may cause some nausea, vomiting, and headache. It may also cause sores in your mouth.
3. Keep this drug out of reach of children.

WHITFIELD'S OINTMENT (Compound Benzoic Acid Ointment, Benzoic and Salicylic Acid Ointment)

FORM

Ointment containing 6% benzoic acid and 3% salicylic acid

USES

Applied to the skin, Whitfield's ointment is effective in the treatment of ringworm and other fungus infections of mild to moderate severity.

DOSAGES

Apply the ointment two to three times per day for up to four to six weeks.

SIDE EFFECTS

None

WARNING

None

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

1. You must apply this ointment for many weeks to get rid of your skin infection.
2. Apply the ointment at least three times a day to the skin lesions. Rub the ointment into the lesions thoroughly each time.
3. Keep this drug out of reach of children.

NYSTATIN VAGINAL SUPPOSITORY TABLETS

FORM

Tablets for vaginal use, 100,000 units

USE

Nystatin suppositories are effective against monilial vaginitis.

DOSAGES

Tell the patient to insert one tablet twice a day for three days, followed by one tablet daily for four more days.

SIDE EFFECTS

None

WARNING

None

STORAGE

Store in an airtight container below 5°C and protect from light.

PATIENT INSTRUCTIONS

1. Insert one tablet into your vagina in the morning and one at night for the next three days. Then insert one tablet every night for four more days. Moisten the tablet with water before you insert it into your vagina.
2. These tablets should reduce the itching and discharge from your vagina. If these symptoms do not clear up within one week, return to the health center.
3. Keep this drug out of reach of children.

NYSTATIN ORAL SUSPENSION

FORM

Powder for suspension, 100,000 U/ml when reconstituted

USE

Nystatin oral suspension is effective in the treatment of oral thrush.

DOSAGES

In infants, use 1 ml every six hours. Use twice this dosage in older children and adults. Paint the solution on the lesions. Have the patient swallow the remainder of the dose. Continue treatment until the lesions disappear.

SIDE EFFECTS

This drug may rarely cause some nausea, vomiting, and diarrhea.

WARNING

None

STORAGE

Store the powder in an airtight container at below 5°C. Protect from light.

PATIENT INSTRUCTIONS

1. This drug is very effective in clearing up the white patches that appear inside your cheeks.
2. Shake the bottle well each time before you use the drug.
3. Pour a very small amount of the drug into a small bottle cap. Then dip a cotton-tipped applicator into the solution and paint the

FORMULARY

patches with it. Then swallow the rest of the drug.

4. Repeat this treatment about three times a day. Continue the treatment until all of the patches have disappeared. If the patches are still present after one week, return to the health center.
5. Keep this drug in a cool place out of reach of children.

Anti-Scabies, Anti-Lice

BENZYL BENZOATE, 25% LOTION

FORM

Lotion, 25%

USES

Benzyl benzoate lotion is effective in treatment of patients with scabies and lice.

DOSAGES

In treatment of scabies, apply benzyl benzoate lotion to the entire body. Two applications at a twenty-four hour interval are usually sufficient to destroy scabies, and 40 ml is sufficient for each application for an adult. In treatment of lice, apply the lotion only to infected areas and hairy areas. Reapply after one week.

SIDE EFFECTS

Benzyl benzoate lotion may cause a burning sensation and mild skin rash.

WARNING

Do not get benzyl benzoate lotion in the eyes.

STORAGE

Store in an airtight container, and protect from light.

PATIENT INSTRUCTIONS

Treatment of Scabies

1. Your entire family should take this treatment. Otherwise, those who have not been treated will infect the treated ones very quickly.
2. Wash the entire body with warm water and soap. Use a brush to gently rub the skin, especially the itchy areas.
3. After drying off, apply this lotion in a thin film over the entire body, from the chin to

the soles of the feet. Rub it into the itchy areas. Allow the lotion to dry. Do not wash it off.

4. After twenty-four hours, apply the lotion to the entire body again.
5. Twenty-four hours after the second application, wash the lotion off the entire body.
6. Wash all clothes and bedding. Iron them if possible in order to destroy the eggs.
7. Keep the drug out of reach of children.

Treatment of Lice

1. Rub benzyl benzoate lotion into the infected areas and hairy areas. Leave the lotion on overnight.
2. Repeat this treatment one week later. If you do not repeat the treatment, new lice will hatch from the eggs in about one week.
3. Wash all clothes and bedding. Iron them if possible in order to destroy the eggs.
4. Keep the drug out of reach of children.

GAMMA BENZENE HEXACHLORIDE (Lindane)

FORMS

Cream, 1%

Shampoo, 1%

USES

Gamma benzene hexachloride is an effective insecticide that will kill both lice and scabies.

DOSAGES

25 g of gamma benzene hexachloride cream is sufficient to cover the entire body with a thin film. For scabies, following a bath with soap and water, apply cream to all parts of the body except the face. Wash the cream off after twenty-four hours.

For head lice, wet the scalp with water. Apply shampoo and work up a lather. Shampoo for five minutes, then rinse off. Comb with a fine-toothed comb to remove the eggs from the hair. Repeat the treatment after one week.

For pubic lice, wash the area with soap and water and dry with a rough towel. Apply cream to the entire area, including thighs, trunk, and arm pits. Wash off after twelve hours. Alternatively, apply shampoo to the entire area and work up a lather. Shampoo for five minutes,

then rinse the area. Comb with a fine-toothed comb to remove the nits from the hair. Repeat the treatment after one week.

SIDE EFFECTS

Gamma benzene hexachloride can cause skin rash if applied too frequently.

WARNING

Gamma benzene hexachloride may cause convulsions if taken by mouth.

STORAGE

Protect from light.

PATIENT INSTRUCTIONS

Treatment of Scabies

1. Bathe with soap and water. Dry yourself thoroughly.
2. Apply this drug to your entire body except your face. Leave the drug on your body for twenty-four hours.
3. If you have any itching after one week, repeat the treatment.
4. Keep this drug out of reach of children.

Treatment of Lice

1. Bathe with soap and water. Dry yourself thoroughly.
2. Massage the drug into the hair and surrounding skin. Continue to thoroughly massage the drug into the affected area for five minutes.
3. Then wash the drug off the area.
4. If necessary, repeat this treatment after one week.
5. Keep this drug out of reach of children.

DDT, 10% POWDER (Dicophane Dusting Powder, DDT Dusting Powder)

FORM

Powder, 10%

USES

DDT 10% powder is an insecticide that kills fleas and body lice.

DOSAGES

Dust clothes with DDT 10% powder only if boiling the clothes is not possible. Wash clothes after dusting them.

SIDE EFFECTS

None when properly used

WARNING

DDT is a poison. Symptoms of acute poisoning include vomiting, diarrhea, numbness, excitement, tremors, convulsions, and coma. Keep DDT out of reach of children.

STORAGE

Store in airtight containers and protect from light.

PATIENT INSTRUCTIONS

1. Dust DDT powder into the seams of your clothing. It will destroy fleas and lice that may be in the clothing.
2. Then wash your clothing.
3. DDT is a poison. Keep it out of reach of children.

Others

SELENIUM SULFIDE, 2.5% LOTION

FORM

Lotion, 2.5%

USES

Selenium sulfide is effective in the treatment of cradle cap and tinea versicolor.

DOSAGES

Apply the lotion to the affected area of skin and rub it into a lather. Rinse the lotion off after fifteen minutes. Repeat this application daily for four days. In the treatment of tinea versicolor, apply the lotion twice a week for two months.

SIDE EFFECTS

Selenium sulfide causes irritation to the eyes and mucous membranes.

WARNING

Selenium sulfide is very toxic if taken internally. Keep out of the reach of children.

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

1. Apply this drug to the affected area of skin. Rub it into a lather.

FORMULARY

2. After fifteen minutes, wash the drug off.
3. For tinea versicolor, follow this treatment twice a week for two months.
4. For cradle cap, follow this treatment daily for four days.
5. When taken by mouth, this drug is poisonous. Keep it out of reach of children.

PETROLATUM OINTMENT (Yellow Petrolatum, Yellow Soft Paraffin, Vaseline)

FORM

Ointment

USES

Petrolatum ointment provides a protective covering when applied to the skin. It prevents the loss of water from dry, irritated skin in patients with eczema or other chronic skin conditions.

DOSAGES

Rub the ointment onto the skin as often as required to keep the skin lubricated.

SIDE EFFECTS

None

WARNING

None

STORAGE

Protect from light.

PATIENT INSTRUCTIONS

1. Apply petrolatum ointment to the skin as a thin film. It will help to keep the skin moist and to protect against irritation.
2. Keep this drug out of reach of children.

TRIPLE SULFA VAGINAL SUPPOSITORY TABLETS

FORM

Tablets for vaginal use

USES

Use triple sulfa vaginal suppositories for patients with non-specific vaginitis, or patients who have not responded to treatment for trichomonal vaginitis or monilial vaginitis.

DOSAGES

Insert one tablet twice a day for three days and then one tablet each night for four more days.

SIDE EFFECTS

This drug can cause allergic reactions such as irritation of the skin and mucous membranes.

WARNING

None

STORAGE

Store in an airtight container.

PATIENT INSTRUCTIONS

1. Remove the wrapper and insert one tablet into your vagina. Repeat this twice daily for three days, and then each night for four more days.
2. If you notice increased irritation and itching in your vagina, stop using this drug and return to the health center.
3. Keep this drug out of reach of children.

CALAMINE LOTION

FORM

Lotion

USE

Calamine lotion is useful in treating wet, irritated skin, because it has a mild drying effect on the skin.

DOSAGES

Following treatment with cold soaks, apply calamine lotion to moist, irritated areas of skin four to six times a day, as required.

SIDE EFFECTS

None

WARNING

None

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

1. Apply calamine lotion to moist, irritated skin four to six times a day. It will soothe the skin and help to dry up skin lesions.
2. Keep this drug out of reach of children.

DIETHYLSTILBESTROL VAGINAL SUPPOSITORY

FORM

Suppository for vaginal use, 0.5 mg

USE

Diethylstilbestrol is effective in the treatment of atrophic vaginitis.

DOSAGES

One suppository twice a week for three weeks. Skip one week and repeat the cycle.

SIDE EFFECTS

None

WARNING

If a post-menopausal patient experiences vaginal bleeding while taking this drug, stop giving her the drug. Refer her to a hospital for further care. Do not use this drug in women who have family histories of cancer of the breast or female organs. Do not use it in women with liver disease.

STORAGE

Store in an airtight container. Protect from light.

PATIENT INSTRUCTIONS

1. These suppositories should help to control symptoms of burning, itching, and discharge.
2. Insert one suppository at bedtime on two days each week for three weeks. You must skip the fourth week before you begin the treatment again.
3. Keep this drug out of reach of children.

Local Anesthetics

LIDOCAINE WITHOUT EPINEPHRINE (Lidocaine Hydrochloride Injection, Xylocaine, Lignocaine)

FORM

Solution for injection, 1% and 2%

USES

Use lidocaine without epinephrine to produce local anesthesia before cleaning and suturing

wounds and before performing and repairing an episiotomy.

DOSAGES

A 1% solution usually produces satisfactory local anesthesia. Do not inject more than 20 ml of a 1% solution or 10 ml of a 2% solution. Always draw back on the needle before infiltrating, in order to avoid injection into a blood vessel.

SIDE EFFECTS

An overdose of lidocaine can cause convulsions, low blood pressure, and respiratory arrest. Drowsiness may occur with usual dosages.

WARNING

Use caution when giving this drug to a person with a history of convulsions or liver disease. Do not give this drug to a person who has reacted to it previously. Before you inject this local anesthetic, always check to make certain that the needle is not in a blood vessel. Injection into a blood vessel will cause an overdose.

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

This drug will cause numbness of the skin at the place it is injected. This numbness will reduce the pain and discomfort you would otherwise feel.

LIDOCAINE, 2% WITH EPINEPHRINE 1:80,000

FORM

1.8 ml cartridge for use with dental cartridge syringe

USE

Use lidocaine with epinephrine for dental anesthesia.

DOSAGES

1.0 to 2.0 ml usually provides sufficient anesthesia. Infiltrate directly into the gums, or use for nerve block.

SIDE EFFECTS

None

FORMULARY

WARNING

None

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

This drug will produce numbness of your teeth and gums so that you will feel only some pressure, but no pain.

DRUGS ACTING ON THE NERVOUS SYSTEM

Analgesics

ASPIRIN (ASA, Acetylsalicylic Acid)

FORM

Tablets, 300 mg

USES

Aspirin is effective in reducing fever, in reducing the discomfort associated with many common illnesses, and in reducing inflammation in arthritis.

DOSAGES

The normal adult dosage is 600 mg every four to six hours. Children should receive 60 mg per year of age per dose, up to a maximum of 600 mg per dose.

In treatment of rheumatic fever, give a total daily dose of up to 130 mg of aspirin per kg body weight, divided into four to six doses. If ringing in the ears, nausea, or vomiting develop, reduce the dosage enough to eliminate these side effects.

SIDE EFFECTS

Aspirin can cause stomach irritation and bleeding, nausea, and vomiting. Ringing in the ears, dizziness, sweating, and confusion are signs of overdosage. Allergic reactions, including skin rash and asthma, may occur.

WARNING

Do not use aspirin in patients who have ulcers or other irritations of their upper intestines. Do not use it in children less than two years of age.

STORAGE

Store in airtight containers out of reach of children.

PATIENT INSTRUCTIONS

1. Take one to two tablets every four hours for pain, discomfort, and fever.
2. Aspirin can cause stomach irritation. Do not use aspirin if you have stomach ulcers.

Take aspirin with food or milk to reduce irritation.

3. Keep aspirin out of reach of children. It is poisonous in large doses.

MORPHINE SULFATE

FORM

Solution for injection, 10 mg/ml

USES

Use morphine sulfate to relieve severe pain in myocardial infarction, cancer, and other causes of severe pain.

DOSAGES

Give adults 10 mg intramuscularly every four to six hours for severe pain. Give children over one year of age 0.2 mg per kg body weight per dose to a maximum of 10 mg per dose. Do not use morphine sulfate in infants.

SIDE EFFECTS

Morphine sulfate can cause nausea, loss of appetite, constipation, confusion, and sweating.

WARNING

Use morphine only in an emergency. Do not give morphine to patients in shock, or to patients with severe asthma, severe head injuries, or respiratory distress. Depression of respiration and blood pressure occur with larger doses. Continued use of morphine is habit-forming.

STORAGE

Store in an airtight container and protect from light.

PATIENT INSTRUCTIONS

1. This drug is a powerful pain-killer. It will help you to feel better.
2. This drug can make you feel sick to your stomach. It can cause sweating and constipation. It can cause you to feel confused.

PETHIDINE HYDROCHLORIDE (Meperidine Hydrochloride)

FORM

Solution for injection, 50 mg/ml

USES

Useful for treating patients with pain that is not severe enough to require morphine. The pain relieving effect lasts for two to four hours after the injection.

DOSAGES

Give adults 100 mg intramuscularly or subcutaneously every four to six hours. Give children one to two mg per kg body weight per dose.

SIDE EFFECTS

Pethidine can cause dizziness, nausea, vomiting, sweating, headache, weakness, and dry mouth.

WARNING

Use only in an emergency. Overdosage of pethidine can cause dilated pupils, convulsions, depressed respirations, and coma. Continued use of pethidine is habit-forming.

STORAGE

Protect from light.

PATIENT INSTRUCTIONS

This is a pain-killing drug. It can also cause some side effects, including dizziness, nausea, vomiting, sweating, headache, weakness, and dry mouth.

Anti-Convulsants

PHENOBARBITAL (Phenobarbitone)

FORMS

Tablet, 30 mg and 60 mg
Elixir, 3 mg/ml

USES

Phenobarbital is effective in the control of grand mal epilepsy. It may be used to attempt to interrupt premature labor.

DOSAGES

To control seizures, give adults 60 mg at bedtime. Increase the dosage each week by 60 mg

to a maximum of 360 mg per day, or until the sedative effect becomes too troublesome. Give children 3 mg to 5 mg per kg body weight at bedtime. Increase the dosage each week until the seizures are under control or the child becomes too drowsy because of the drug.

SIDE EFFECTS

Side effects from phenobarbital are rare. However, overdosage and poisoning lead to decreased respirations, shock, and coma. Patients receiving too large a dose, over a longer period of time, develop many symptoms similar to alcohol intoxication.

WARNING

When a patient has been taking phenobarbital for a long period of time for control of convulsions, he must reduce the dose slowly over a period of several months. Otherwise, convulsions are likely to recur.

STORAGE

Store in an airtight container. Protect from light.

PATIENT INSTRUCTIONS

1. This drug may help to protect you from suffering further attacks of epilepsy.
2. Take the drug as directed.
3. Too much of this drug at one time can cause you to feel intoxicated. It can also cause you to have difficulty breathing.
4. Keep this drug out of reach of children.

AMOBARBITAL SODIUM (Amylobarbitone Sodium)

FORM

Sterile solution for injection, prepared as a 10% solution by adding 2.5 ml of sterile water for injection to 250 mg of powder immediately before use.

USES

Amobarbital sodium is an alternative drug for use in control of continuous seizures related to grand mal epilepsy, rabies, and tetanus.

DOSAGES

To control continuous seizures, give amobarbital intravenously over a five to ten minute period. Alternatively, give the drug intramuscularly.

DRUGS ACTING ON THE NERVOUS SYSTEM

Adults 300 to 1000 mg IV as single dose
Children 3 to 12 mg IV per kg body weight as single dose

Begin with the smaller dose. If seizures continue, give additional injections of the drug. But do not exceed the maximum dose within a six hour period, or the patient may suffer from overdose.

SIDE EFFECTS

Overdosage of amobarbital sodium leads to depressed respirations, low blood pressure, shock, coma, and death.

WARNING

None

STORAGE

Store in airtight containers and protect from light.

PATIENT INSTRUCTIONS

This drug will help to prevent you from having more convulsions.

DIAZEPAM (Valium)

FORM

Solution for injection, 5 mg/ml

USES

Diazepam is effective in the control of repeated seizures associated with grand mal epilepsy, eclampsia during pregnancy, and eclampsia during labor. It is also effective in causing muscle relaxation in cases of tetanus.

DOSAGES

Give diazepam intravenously over a ten minute period.

Adults 10 mg over ten minutes, every fifteen minutes, to a total of 30 mg

Children
5 to 10 years 1.0 mg over ten minutes, every fifteen minutes, to a total of 10 mg

Under 5 years 0.5 mg over ten minutes, every fifteen minutes, to a total of 5 mg

You may repeat the dosage after four hours.

To make intravenous injection at a slow rate easier, dilute diazepam in sterile water for injection.

1 ml Diazepam, 5 mg/ml, + 9 ml sterile water = 5 mg/10 ml solution, or 0.5 mg/ml solution

In patients with tetanus, give diazepam intramuscularly every four hours.

Adults 10 mg

Children 0.5 to 1.0 mg per kg body weight to a maximum of 10 mg

SIDE EFFECTS

Large dosages of diazepam cause drowsiness, light-headedness, and inability to walk or stand without swaying.

WARNING

Overdosage may lead to depressed respirations, low blood pressure, and coma.

STORAGE

Store in an airtight container and protect from light.

PATIENT INSTRUCTIONS

1. This drug will help to stop your convulsions. It will also cause your muscles to relax.
2. This drug can cause drowsiness or light-headedness. Too much of the drug can slow your breathing, lower your blood pressure, and cause unconsciousness.

PHENYTOIN SODIUM (Diphenylhydantoin Sodium)

FORMS

Tablets, 50 mg
Elixir, 100 mg/5 ml

USES

Phenytoin is effective in the control of seizures associated with grand mal epilepsy. Use it together with phenobarbital when one drug does not control the seizures.

DOSAGES

Start adults on 100 mg two times a day. Increase the dose by 100 mg per day every week, to a maximum of 600 mg per day or until the patient notices side effects. Give phenytoin in two doses daily.

Start children with a total of 5 mg to 7 mg per body weight per day, given in two doses.

See the patient weekly until you determine the proper dose. Then see the patient at least once a month.

FORMULARY

SIDE EFFECTS

Phenytoin may cause dizziness, nausea, drowsiness, vomiting, constipation, unsteady gait, slurred speech, mental confusion, headache, difficulty sleeping, and skin rash. Reducing the dosage will control many of these effects. Phenytoin also causes the gums to grow larger and thicker. The patient must brush his teeth regularly to help in preventing this effect.

WARNING

Overdosage can lead to low blood pressure, respiratory depression, and coma.

STORAGE

Store in an airtight container and avoid freezing.

PATIENT INSTRUCTIONS

1. In order to prevent you from having more convulsions, you must remember to take this drug every day. If you suddenly forget to take the drug, you will be more likely to have another convulsion.
2. To obtain the most benefit from this drug, begin with the recommended dosage. Each week you will increase the dosage until you are either free from seizures, or you begin to suffer from side effects of the drug.
3. This drug can cause many side effects. They include dizziness, drowsiness, unsteadiness when walking, confusion, difficulty sleeping, and skin rash. The drug can also cause your gums to become larger. You must brush your teeth every day to help prevent your gums from becoming larger.
4. Keep this drug out of reach of children.

ETHOSUXIMIDE

FORM

Elixir, 250 mg/5 ml

USES

Ethosuximide is an effective drug in controlling seizures in petit mal epilepsy. When petit mal and grand mal epilepsy occur in the same patient, you may use ethosuximide together with phenytoin and phenobarbital.

DOSAGES

Give ethosuximide twice a day. If the patient is under six years of age, begin with 125 mg (2.5

ml) twice a day. For patients six years of age and older, begin with 250 mg (5 ml) in the morning and at night. Gradually increase the dose each week by 125 mg a day in patients under six years of age. Increase the dose of patients six years of age and older by 250 mg a day each week. The usual maximum dose for patients under six years of age is 1000 mg (20 ml) a day. Patients six years of age and older may require up to 1500 mg (30 ml) a day.

SIDE EFFECTS

Drowsiness is a common side effect of ethosuximide. Nausea, vomiting, abdominal pain, and loss of appetite occur frequently. Other side effects also occur frequently.

WARNING

Do not give ethosuximide to patients who have liver disease or kidney disease.

STORAGE

Store in an airtight, light resistant container in a cool place.

PATIENT INSTRUCTIONS

1. Remember to take this drug in the morning and at night.
2. Begin with a small amount of drug. Each week increase the dose until the seizures are under control or until you have reached the maximum dosage.
3. This drug can cause drowsiness. It may also cause nausea, vomiting, loss of appetite, and pain in the stomach. If any of these symptoms or other symptoms develop, come back to the health center immediately.
4. Keep this drug out of reach of children.

MAGNESIUM SULFATE, 50% SOLUTION

FORM

50% solution for injection, 1 g/2 ml

USES

Magnesium sulfate, given intravenously or intramuscularly, is effective in controlling convulsions and lowering blood pressure in women suffering from eclampsia.

DOSAGES

Give 6 ml to 8 ml of magnesium sulfate intramuscularly in each buttock after scrubbing the

skin with alcohol and iodine solutions to reduce the chance of infection. Move the needle during the injection, and massage the area afterwards. Continue to give one half of this dose every six hours until delivery has occurred and the symptoms have cleared up. Do not give magnesium sulfate if the woman is passing no urine or if she is suffering from respiratory depression, breathing less than sixteen times per minute, or in a deep coma.

SIDE EFFECTS

Toxic effects may occur. These include flushing of the face, thirst, severe lowering of the blood pressure, and respiratory depression.

WARNING

Do not give magnesium sulfate if the woman is passing no urine or if she is suffering from respiratory depression, breathing less than sixteen times per minute, or in a deep coma.

STORAGE

Store in an airtight container in a cool place.

PATIENT INSTRUCTIONS

When your blood pressure is very high, this drug helps to lower it. Although the drug may cause you to breathe more slowly, you need to have this injection.

Insecticide Poisoning Antidote

ATROPINE SULFATE

FORM

Solution for injection, 1 mg/ml

USES

Atropine sulfate will counteract the effects of a certain group of insecticides known as organic phosphate insecticides. These poisons cause dizziness, headache, blurred vision, contracted pupils, excess tears and watering of the mouth, sweating, weakness, twitching of muscles, convulsions, and coma.

DOSAGES

Give adults 2 mg of atropine IM every five to ten minutes until the pupils are dilated and the other symptoms of poisoning have begun to lessen. Give up to 50 mg over a twenty-four hour period if necessary.

In children, give 0.05 mg per kg of body weight per dose.

SIDE EFFECTS

The side effects of atropine include dryness of the mouth, dilation of the pupils, flushing of the skin, slow heart rate followed by rapid heart rate and irregular heart rhythm.

WARNING

Overdose leads to rapid respirations, confusion, and excitement.

STORAGE

Protect from light. If discolored, discard and obtain a new supply.

PATIENT INSTRUCTIONS

This drug will relieve the effects of the poisoning you are suffering. It will cause your mouth to feel dry and your skin to become flushed.

Anti-Migraine

ERGOTAMINE TARTRATE AND CAFFEINE

FORM

Tablets with 2 mg of ergotamine tartrate and 100 mg of caffeine

USES

This drug may be helpful in blocking the development of migraine headaches. It may also reduce the severity of these headaches.

DOSAGES

One tablet at the first suggestion of a headache.

An additional tablet every thirty minutes for a total of three tablets, or until side effects develop or the headache ceases.

SIDE EFFECTS

Ergotamine tartrate and caffeine may cause nausea, vomiting, headache, diarrhea, thirst, numbness or tingling in the arms and legs, and coldness of the arms and legs.

WARNING

Advise the patient to take no more than twelve tablets in a week, or six tablets in one twenty-four hour period.

FORMULARY

STORAGE

Protect from light.

PATIENT INSTRUCTIONS

1. You will be most successful in using this drug if you start taking it at the very first suggestion of a headache.
2. At the first suggestion of a headache, take one tablet. Then go into a dark, quiet room, lie down, and relax.
3. Take an additional tablet every thirty minutes for a total of three tablets.
4. Stop taking the tablets if you develop severe side effects from the tablets or the headache clears up. The tablets themselves may cause some nausea, vomiting, and headache. These effects may be difficult to distinguish from the migraine headache itself.
5. Additional side effects of this drug include diarrhea, thirst, numbness or tingling in the arms and legs, and coldness of the arms and legs.
6. This drug is very dangerous. Keep it out of reach of children.

Psychotherapeutic

CHLORPROMAZINE HYDROCHLORIDE

FORMS

Tablets, 25 mg

Solution for injection, 25 mg/ml

USES

Chlorpromazine will help to quiet patients who are very agitated and upset and whose

minds are not functioning properly. It is also effective in reducing the vomiting associated with many acute illnesses such as acute gastroenteritis.

DOSAGES

Give adults 25 to 50 mg by mouth or intramuscularly to stop vomiting. Give children 1 mg per kg of body weight every four to six hours.

For severely disturbed patients, give 50 mg intramuscularly every four hours. Increase the dosage if required.

SIDE EFFECTS

Chlorpromazine may cause drowsiness, dryness of the mouth, low blood pressure, rapid heart rate, lowered body temperature, depression, or excitement.

WARNING

Do not use chlorpromazine in pregnant women. Do not give it to patients with acute alcoholism or liver disease. Do not give it to patients who are unconscious.

STORAGE

Store in airtight containers and protect from light.

PATIENT INSTRUCTIONS

1. This drug will help you to become calm. It will also stop vomiting.
2. This drug will cause drowsiness. It may make your mouth dry.
3. Keep this drug out of reach of children.

DRUGS ACTING ON THE EYE

TETRACYCLINE, 1% EYE OINTMENT

FORM

Ophthalmic ointment, 1%

USES

Tetracycline 1% eye ointment is useful in treating early trachoma. It is also useful in treatment of other types of bacterial conjunctivitis and treatment of injuries to the cornea. Use it as an alternative to penicillin G eye ointment in the treatment of gonococcal conjunctivitis in the newborn.

DOSAGES

Apply the tetracycline 1% eye ointment to each eye twice daily. Continue the applications for four weeks in patients with early trachoma. Apply the tetracycline 1% eye ointment for up to seven days in patients with other types of conjunctivitis.

SIDE EFFECTS

None

WARNING

None

STORAGE

Store in a cool place and protect from light.

PATIENT INSTRUCTIONS

1. Clean your eyes out.
2. Then put this ointment into your eyes twice a day, as demonstrated.
3. Keep this drug out of reach of children.

SILVER NITRATE, 1% SOLUTION

FORM

Ophthalmic solution, 1%

USE

Use 1% silver nitrate solution in newborns to prevent gonococcal conjunctivitis.

DOSAGES

Apply two drops in each eye shortly after birth.

SIDE EFFECTS

Silver nitrate may cause redness and irritation of the eyes, which will clear up within two to three days.

WARNING

None

STORAGE

Store in an airtight container and protect from light.

PATIENT INSTRUCTIONS

1. This drug will prevent a very severe eye infection that sometimes occurs at birth.
2. The drug can cause some redness of the eyes, which will clear up in one to two days.

PENICILLIN G EYE OINTMENT

FORM

Ophthalmic ointment

USE

Use penicillin G eye ointment for local treatment of conjunctivitis in the newborn.

DOSAGES

Apply the penicillin G eye ointment to the conjunctivae after cleaning the eyes, every two hours for forty-eight hours, and then four times daily until the conjunctivitis has completely cleared up.

SIDE EFFECTS

None

WARNING

None

STORAGE

Store in a cool place.

PATIENT INSTRUCTIONS

This drug is helpful in treating inflammation of the eyes that develops shortly after birth.

ANTI-ALLERGY

CHLORPHENIRAMINE MALEATE

FORMS

Tablets, 4 mg
Solution for injection, 10 mg/ml

USES

Chlorpheniramine is very effective in controlling itchy skin lesions associated with eczema or drug reactions, and allergic symptoms associated with onchocerciasis.

DOSAGES

In mild reactions

Adults 4 mg by mouth every three or four hours

Children

1 to 5 years 1 to 2 mg by mouth three times a day

In severe reactions

Adults 10 to 20 mg IM

Children 0.5 mg per kg body weight IM up to a maximum dosage of 10 mg

You may repeat the dosage, but do not exceed 40 mg over a twenty-four hour period.

SIDE EFFECTS

May cause drowsiness

WARNING

None

STORAGE

Store in airtight containers and protect from light.

PATIENT INSTRUCTIONS

1. This drug is very helpful in controlling the symptoms of allergy, especially itchy skin rash.
2. Keep this drug out of reach of children.

ANTI-INFLAMMATORY

BETAMETHASONE

FORM

Tablets, 0.6 mg

USE

Betamethasone is effective in reducing inflammation in certain conditions.

DOSAGES

In the treatment of onchocerciasis, give 0.6 mg three times a day for the first week, and 0.6 mg daily for the second week. Give the drug for at least twenty-four hours before giving the first dose of diethylcarbamazine.

SIDE EFFECTS

Side effects from betamethasone are unlikely when the patient takes the drug for a short period of time.

WARNING

None

STORAGE

None

PATIENT INSTRUCTIONS

1. Take this drug three times a day for the first week. Take one 0.6 mg tablet each time.
2. Take the drug once a day for the second and third weeks.
3. Keep this drug out of reach of children.

OTHER

PROBENECID (Benemid)

FORM

Tablets, 500 mg

USES

Probenecid is used in the treatment of gonorrhea, pelvic inflammatory disease, and other infections, to slow down the elimination of penicillin through the kidneys. In this way, it helps to increase the level of penicillin in the blood after an oral or intramuscular dose of penicillin.

DOSAGE

1 g one-half hour before injection of penicillin

SIDE EFFECTS

At this dosage level, probenecid has no side effects.

WARNING

None

STORAGE

Store at room temperature.

PATIENT INSTRUCTIONS

This drug will help to make the penicillin injection more effective than it would be otherwise.

VITAMINS AND MINERALS

FERROUS SULFATE

FORMS

Oral suspension, 300 mg/10 ml
Tablets, 300 mg

USES

Use ferrous sulfate in the prevention and treatment of anemia caused by lack of iron.

DOSAGES

The dosage varies, depending upon whether treatment of anemia or prevention of anemia is required.

	TREATMENT	PREVENTION
Adults	300 mg three times a day	300 mg a day
Children		
6 to 12 years	300 mg twice a day	150 mg a day
1 to 6 years	150 mg three times a day	150 mg a day
Under 1 year	60 mg three times a day	60 mg a day

SIDE EFFECTS

Ferrous sulfate may cause discomfort in the abdomen, nausea, constipation or diarrhea, and black stools.

WARNING

Keep out of reach of children. Ferrous sulfate is poisonous if taken in overdosage.

STORAGE

Store tablets in airtight containers. Store in a cool place.

PATIENT INSTRUCTIONS

1. This drug contains iron, which your body needs in order to make blood properly.
2. Many foods contain iron. You must eat foods that contain iron so that your body will get the natural iron that it needs.
3. However, right now the drug will give your body an extra amount of iron. The iron will get into your blood most quickly if you take it when your stomach is empty.
4. If the drug causes you to feel sick to your stomach, or to have discomfort, take the drug right after eating. Do not take antacids while you are taking this drug. Antacids will prevent the body from using the drug.

5. This drug is poisonous in large doses. Keep it out of reach of children.

FOLIC ACID

FORM

Tablets, 1 mg

USES

Use folic acid tablets for treatment and prevention of folic acid deficiency during pregnancy.

DOSAGE

Give one tablet daily throughout pregnancy and lactation.

SIDE EFFECTS

None

WARNING

None

STORAGE

Store in an airtight container and protect from light.

PATIENT INSTRUCTIONS

1. Take one tablet daily to help prevent anemia.
2. Keep this drug out of reach of children.

IRON AND FOLIC ACID

FORM

Tablets containing ferrous fumarate, equivalent to 100 mg of iron, and 350 micrograms of folic acid

USES

Use iron and folic acid tablets as a dietary supplement during pregnancy and lactation to prevent anemia.

DOSAGE

One tablet daily throughout pregnancy and lactation

SIDE EFFECTS

The iron part of the preparation, ferrous fumarate, may cause some abdominal pain, constipation, and black stools.

WARNING

None

STORAGE

Store in airtight containers and protect from light.

PATIENT INSTRUCTIONS

1. Take one tablet daily to help prevent anemia.
2. Keep this drug out of reach of children.

VITAMIN A

FORMS

Capsules, 25,000 IU
Solution for injection, 50,000 IU/ml

USES

Use both capsules and solution for injection in the treatment and prevention of Vitamin A deficiency.

DOSAGES

Give 100,000 units at the time of diagnosis. Repeat this dose on the following day and again in two weeks. Or give 25,000 units daily by mouth for the first two weeks after diagnosis.

SIDE EFFECTS

Toxic side effects occur with excessive doses of Vitamin A over a long period of time. Chronic effects include tiredness, irritability, loss of appetite and weight, vomiting, and fever.

Acute side effects include headache, sedation, irritability, and peeling of the skin.

WARNING

None

STORAGE

Store in airtight containers in a cool place. Protect from light.

PATIENT INSTRUCTIONS

None

OBSTETRICAL AND CHILD SPACING

ERGONOVINE MALEATE (Ergometrine Maleate)

FORM

Sterile solution for injection, 0.2 mg/ml

USES

Ergonovine is effective in controlling bleeding after delivery and during abortions in early pregnancy by causing the uterus to contract.

DOSAGE

Give 0.2 mg IM. You may repeat this dose if necessary, up to five times over a twenty-four hour period.

SIDE EFFECTS

Nausea and vomiting occur occasionally.

WARNING

Give this drug very cautiously when the blood pressure is elevated.

STORAGE

Protect from light and store in a cool place.

PATIENT INSTRUCTIONS

This drug is very helpful in controlling bleeding. It causes the womb to clamp down and prevent further blood loss.

ORAL CONTRACEPTIVES

FORM

Packets of 28 tablets

USES

The most frequently used type of oral contraceptive tablets prevents ovulation and pregnancy. The tablets contain a combination of artificial estrogen and progesterone. When the woman takes a tablet daily, the tablets prevent ovulation and pregnancy.

DOSAGE

Follow the manufacturer's instructions. Usually, the woman takes one tablet per day.

SIDE EFFECTS

Oral contraceptives may cause nausea, blood clots in the legs, increased blood pressure or

hypertension, headaches, increased blood sugar, vaginal bleeding or staining between menstrual periods, increased irritation or depression, weight gain from retention of water, and darkening of the skin.

WARNING

Do not prescribe oral contraceptives if you detect a history of any of these problems:

- Blood clots or inflammation of leg veins
- Breast lumps or breast cancer
- High blood pressure
- Severe headaches
- Liver disease or jaundice
- Heart disease, including rheumatic heart disease
- Cancer of the uterus or cervix
- Unexplained vaginal bleeding for more than one week

STORAGE

Store in airtight containers and protect from light.

PATIENT INSTRUCTIONS

1. Take one tablet at the same time every day.
2. Begin with the first white tablet, five days after your menstruation begins.
3. Take one pill every day, following the line on the packet.
4. Take all of the white pills before you start taking the brown pills.
5. You will probably start to menstruate while you are taking the brown pills.
6. Continue taking a pill every day until you have finished the packet.
7. Two days before you finish the first packet, return to the health center for more packets and a follow-up visit. At this visit you will receive a three-month supply of oral contraceptives.
8. Start a new packet, beginning with the first white tablet, the day after you finish the old packet.
9. If you forget to take a tablet for a day, take that tablet as soon as you remember it. Also take the regular tablet for that day. If you

forget to take tablets for two days, use another method of child spacing for the rest of that month. However, continue to take one tablet a day until you finish the packet.

10. If you develop any severe headaches, difficulty with your vision, swelling of your legs, or other severe symptoms, return to the health center immediately.
11. You may experience some nausea when you first start taking the tablets. You may even vomit a little bit, as some women do in early pregnancy. You may have some bleeding from the vagina between menstrual periods. However, these common side effects are not reasons to stop taking the tablets.
12. Keep the drug out of reach of children.

SPERMICIDES

FORMS

Spermicidal cream with applicator
 Spermicidal jelly with applicator
 Spermicidal foam in pressurized can, with applicator

USES

When inserted into the vagina before intercourse, spermicides will kill the sperm directly. Spermicides provide a chemical barrier that blocks the entrance of the sperm into the uterus, helping to prevent pregnancy. However, spermicides are not sufficient when used alone.

DOSAGE

Follow the directions of the manufacturer.

SIDE EFFECTS

Spermicides can cause burning and irritation of the vagina or penis.

WARNING

None

STORAGE

Store in an airtight container.

PATIENT INSTRUCTIONS

Spermicidal cream or jelly

1. Use spermicidal cream or jelly in combination with a diaphragm.
2. Place spermicidal cream or jelly in the diaphragm cup before inserting the diaphragm.
3. Insert the diaphragm within two hours before intercourse.
4. Leave the diaphragm in place for six to eight hours after intercourse.
5. Keep the drug out of reach of children.

Spermicidal foam

1. Use spermicidal foam in combination with a condom.
2. Use two full applicators of spermicidal foam each time you have intercourse.
3. Insert the spermicidal foam within fifteen minutes before intercourse.
4. Leave the spermicidal foam in your vagina for six to eight hours after intercourse.
5. Keep the drug out of reach of children.

ALPHABETICAL CROSS INDEX OF DRUGS

- Alumina and magnesia 32
Aminophylline 35
Amobarbital sodium 54
Ampicillin 17
Aspirin 53
Atropine sulfate 57
BCG vaccine 40
Benzathine penicillin 19
Benzyl benzoate, 25% lotion 48
Benzylpenicillin G 18
Bephenium hydroxynaphthoate 15
Betamethasone 60
Calamine lotion 50
Chloramphenicol 21
Chloroquine phosphate 29
Chlorpheniramine maleate 60
Chlorpromazine hydrochloride 58
Contraceptives, oral 64
Dapsone 24
DDT, 10% powder 49
Dextrose, 5% in 1/2 normal saline 37
Dextrose, 5% in water 37
Diazepam 55
Diethylcarbamazine citrate 16
Diethylstilbestrol vaginal suppository 51
Digoxin 44
DPT vaccine 40
DT vaccine 41
Epinephrine 35
Ergonovine maleate 64
Ergotamine tartrate and caffeine 57
Erythromycin 22
Ethosuximide 56
Ferrous sulfate 62
Folic acid 62
Gamma benzene hexachloride 48
Gentian violet, 1% solution 46
Glucose, 50% solution 39
Glyceryl guaiacolate 35
Glyceryl trinitrate 43
Griseofulvin 31
Hydrochlorothiazide 43
Hydrocortisone, 1% ointment 46
Hydrogen peroxide, 3% solution 45
Ipecac syrup 32
Iron and folic acid 62
Isoniazid 26
Lidocaine, 2% with epinephrine 1:80,000 51
Lidocaine without epinephrine 51
Lignocaine and hydrocortisone rectal suppository 33
Magnesium sulfate crystals 33
Magnesium sulfate, 50% solution 56
Measles vaccine 41
Mepacrine hydrochloride 28
Metronidazole 28
Mineral oil 33
Morphine sulfate 53
Niclosamide 14
Normal saline 38
Nystatin vaginal suppository tablets 47
Nystatin oral suspension 47
Oral contraceptives 64
Oral rehydration powder 34
Para-aminosalicylic acid 26
Penicillin, benzathine 19
Penicillin G, benzyl- 18
Penicillin G eye ointment 59
Penicillin G, procaine 20
Penicillin V 20
Pethidine hydrochloride 54
Petrolatum ointment 50
Phenobarbital 54

FORMULARY

Phenylephrine hydrochloride	45	Sterile water for injection	39
Phenytoin sodium	55	Streptomycin sulfate	25
Piperazine hydrate	14	Sulfadiazine	23
Poliomyelitis vaccine	42	Sulfadimidine	24
Povidone-iodine, 10% solution	45	Tetanus toxoid	42
Probenecid	61	Tetrachlorethylene	15
Procaine penicillin G	20	Tetracycline hydrochloride	22
Pyrantel pamoate	16	Tetracycline, 1% eye ointment	59
Quinine dihydrochloride	29	Thiacetazone	27
Ringer's lactate	38	Triple sulfa vaginal suppository tablets	50
Selenium sulfide, 2.5% lotion	49	Vitamin A	63
Silver nitrate, 1% solution	59	Whitfield's ointment	47
Spermicides	65		

STANDARD LIST OF DRUGS

This list differs from and supercedes the list of drugs that appears on the Inventory, Order, Issue, and Receipt form for drugs and supplies in the Health Center Operations manual.

STOCK NUM- BER		UNIT OF ISSUE
001	Niclosamide, 500 mg tabs	bottle of 100
002	Piperazine hydrate, 150 mg/ml elixir	1 liter bottle
003	Bephenium hydroxynaphthoate granules, 2.5 g base	5 g packet
004	Tetrachlorethylene, 1 ml caps	bottle of 50
005	Tetrachlorethylene, 2.5 ml caps	bottle of 50
006	Tetrachlorethylene, 5 ml caps	bottle of 50
007	Pyrantel pamoate, 250 mg/5 ml oral suspension	1 liter bottle
008	Diethylcarbamazine citrate, 50 mg tabs	bottle of 50
009	Ampicillin, 250 mg caps	bottle of 100
010	Ampicillin, 125 mg/5 ml oral suspension	200 ml bottle
011	Ampicillin sodium, injection	500 mg vial
012	Beazylpenicillin G, 300 mg/ml injection	10 ml vial
013	Benzathine penicillin, 300 mg/ml injection	10 ml vial
014	Benzathine penicillin, 600 mg/ml injection	10 ml vial
015	Penicillin V, 125 mg tabs	bottle of 100
016	Penicillin V, 250 mg tabs	bottle of 100
017	Penicillin V, 250 mg/5 ml oral suspension	200 ml bottle
018	Procaine penicillin G, 300 mg/ml injection	10 ml vial
019	Procaine penicillin G, 600 mg/ml injection	10 ml vial
020	Chloramphenicol, 250 mg caps	bottle of 100
021	Chloramphenicol, 150 mg/5 ml oral suspension	1 liter bottle
022	Erythromycin, 250 mg caps	bottle of 100
023	Erythromycin, 200 mg/5 ml oral suspension	100 ml bottle
024	Tetracycline hydrochloride, 125 mg caps	bottle of 100
025	Tetracycline hydrochloride, 250 mg caps	bottle of 100
026	Sulfadiazine, 500 mg tabs	bottle of 100
027	Sulfadimidine, 500 mg tabs	bottle of 100
028	Sulfadimidine, 500 mg/5 ml mixture	1 liter bottle
029	Dapsone, 25 mg tabs	bottle of 500
030	Dapsone, 100 mg tabs	bottle of 1000
031	Streptomycin sulfate, 500 mg/ml injection	10 ml vial
032	Isoniazid, 50 mg tabs	bottle of 500

FORMULARY

033	Isoniazid, 100 mg tabs	bottle of 500
034	Para-aminosalicylic acid, 500 mg tabs	bottle of 500
035	Thiacetazone, 50 mg tabs	bottle of 100
036	Thiacetazone, 75 mg tabs	bottle of 100
037	Thiacetazone, 100 mg tabs	bottle of 100
038	Metronidazole, 250 mg tabs	bottle of 100
039	Mepacrine hydrochloride, 100 mg tabs	bottle of 100
040	Quinine dyhydrochloride	1 packet
041	Chloroquine phosphate, 250 mg tabs	bottle of 100
042	Chloroquine phosphate, 65 mg/ml injection	5 ml vial
043	Griseofulvin, 125 mg tabs	bottle of 50
044	Griseofulvin, 250 mg tabs	bottle of 50
045	Alumina and magnesia, oral suspension	1 liter bottle
046	Alumina and magnesia, tabs	bottle of 100
047	Ipecac syrup	100 ml bottle
048	Lignocaine and hydrocortisone rectal suppository	box of 5
049	Mineral oil	1 liter bottle
050	Magnesium sulfate crystals	1 kg jar
051	Oral rehydration powder	1 packet
052	Aminophylline, 100 mg tabs	bottle of 100
053	Epinephrine, 1 mg/ml 1:1000 solution injection	1 ml vial
054	Glyceryl guaiacolate, 100 mg/5 ml syrup	1 liter bottle
055	Glyceryl guaiacolate, 200 mg caps	bottle of 100
056	Dextrose, 5% in water	1 liter bottle
057	Dextrose, 5% in 1/2 normal saline	1 liter bottle
058	Normal saline	1 liter bottle
059	Ringer's lactate	1 liter bottle
060	Glucose, 50% solution	100 ml bottle
061	Sterile water for injection	2 ml vial
062	Sterile water for injection	10 ml vial
063	BCG vaccine	10 dose vial
064	DPT vaccine	7.5 ml vial
065	DT vaccine	5 ml vial
066	Measles vaccine	single dose vial
067	Poliomyelitis vaccine	5 ml bottle
068	Tetanus toxoid	5 ml bottle
069	Glyceryl trinitrate, 0.4 mg tabs	bottle of 20
070	Hydrochlorothiazide, 25 mg tabs	bottle of 100
071	Hydrochlorothiazide, 50 mg tabs	bottle of 100
072	Digoxin, 125 microgram tabs	bottle of 100
073	Digoxin, 250 microgram tabs	bottle of 100
074	Phenylephrine hydrochloride, 0.25% solution	100 ml bottle

STANDARD LIST OF DRUGS

075	Povidone-iodine, 10% solution	1 liter bottle
076	Hydrogen peroxide, 3% solution	1 liter bottle
077	Hydrocortisone, 1% ointment	20 g tube
078	Gentian violet, 1% solution	100 ml bottle
079	Whitfield's ointment	250 g jar
080	Nystatin vaginal suppository tablets	bottle of 100
081	Nystatin oral suspension, 100,000 U/ml	500 ml bottle
082	Benzyl benzoate, 25% lotion	1 liter bottle
083	Gamma benzene hexachloride, 1% cream	250 g jar
084	Gamma benzene hexachloride, 1% shampoo	500 ml bottle
085	DDT, 10% powder	1 kg box
086	Selenium sulfide, 2.5% lotion	250 ml bottle
087	Petrolatum ointment	500 g jar
088	Triple sulfa vaginal suppository tablets	box of 10
089	Calamine lotion	1 liter bottle
090	Diethylstilbestrol vaginal suppository	box of 20
091	Lidocaine without epinephrine, 1% injection	50 ml vial
092	Lidocaine without epinephrine, 2% injection	50 ml vial
093	Lidocaine with epinephrine, 2% injection for dental use	1.8 ml cartridge
094	Aspirin, 300 mg tabs	bottle of 100
095	Morphine sulfate, 10 mg/ml injection	1 ml vial
096	Pethidine hydrochloride, 50 mg/ml injection	1 ml vial
097	Phenobarbital, 30 mg tabs	bottle of 100
098	Phenobarbital, 60 mg tabs	bottle of 100
099	Phenobarbital, 3 mg/ml elixir	500 ml bottle
100	Amobarbital sodium, powder for solution	250 mg vial
101	Diazepam, 5 mg/ml injection	10 ml vial
102	Phenytoin sodium, 50 mg tabs	bottle of 100
103	Phenytoin sodium, 100 mg/5 ml elixir	1 liter bottle
104	Ethosuximide, 250 mg/5 ml elixir	1 liter bottle
105	Magnesium sulfate, 50% solution for injection	2 ml vial
106	Atropine sulfate, 1 mg/ml injection	10 ml vial
107	Ergotamine tartrate (2 mg) and caffeine (100 mg), tabs	bottle of 50
108	Chlorpromazine hydrochloride, 25 mg tabs	bottle of 50
109	Chlorpromazine hydrochloride, 25 mg/ml injection	10 ml vial
110	Tetracycline, 1% eye ointment	4 g tube
111	Silver nitrate, 1% solution	5 ml bottle
112	Penicillin G eye ointment	4 g tube
113	Chlorpheniramine maleate, 4 mg tabs	bottle of 50
114	Chlorpheniramine maleate, 10 mg/ml injection	30 ml vial
115	Betamethasone, 0.6 mg tabs	bottle of 10
116	Probenecid, 500 mg tabs	bottle of 50

FORMULARY

117	Ferrous sulfate, 300 mg/10 ml oral suspension	1 liter bottle
118	Ferrous sulfate, 300 mg tablets	bottle of 100
119	Folic acid, 1 mg tablets	bottle of 100
120	Iron and folic acid, tablets	bottle of 1000
121	Vitamin A, 25,000 IU caps	bottle of 100
122	Vitamin A, 50,000 IU/ml injection	10 ml vial
123	Ergonovine maleate, 0.2 mg/ml injection	1 ml vial
124	Oral contraceptives	packet of 28
125	Spermicidal jelly or cream	100 g container
126	Spermicidal foam	100 g container

**DIAGNOSTIC AND PATIENT CARE
GUIDES**

The MEDEX Primary Health Care Series

**DIAGNOSTIC AND
PATIENT CARE GUIDES**

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Health Manpower Development Staff
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University of Hawaii, Honolulu, Hawaii, U.S.A.

Library of Congress Catalog Card No. 83-80675

First Edition

Printed in U. S. A.

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Funded by the U.S. Agency for International Development Contract No. DSPE-C-0006. The views and interpretations expressed are those of the Health Manpower Development Staff and are not necessarily those of the United States Agency for International Development.

15

Table of Contents

ALPHABETICAL LISTING OF DISEASES AND CONDITIONS	10	LIVER DISEASES	34
PREFACE	15	Viral Hepatitis	34
GUIDE FOR CALCULATING ANTIBIOTIC DOSAGES	16	Cirrhosis	34
GUIDE FOR WHEN TO GIVE IMMUNIZATIONS	19	ACUTE ABDOMEN	35
GUIDE FOR REDUCING FEVER	19	Acute Abdomen	35
GUIDE FOR CALCULATING HOW MUCH INTRAVENOUS FLUID TO GIVE A PATIENT	20	Acute Appendicitis	35
		Intestinal Block	35
RESPIRATORY AND HEART		ANAL PROBLEMS	36
RESPIRATORY SYSTEM PROBLEMS	22	Hemorrhoids	36
Pneumonia	22	Anal Fissures	36
Acute Bronchitis	22	GENITOURINARY	
Chronic Bronchitis and Emphysema	23	URINARY TRACT INFECTIONS AND STONES	38
Bronchial Asthma	23	Urinary Tract Infection	38
Pleural Effusion	24	Stones in the Urinary Tract	38
Tuberculosis	24	KIDNEY PROBLEMS	39
HEART PROBLEMS	25	Nephritis	39
Congestive Heart Failure	25	Nephrotic Syndrome	39
Rheumatic Heart Disease	26	PROBLEMS OF THE PROSTATE AND SCROTUM	40
Angina Pectoris	26	Enlarged Prostate Gland	40
Myocardial Infarction	27	Prostatitis	40
Hypertension	27	Scrotal Swelling	40
GASTROINTESTINAL		PROBLEMS SPREAD BY SEXUAL CONTACT	40
DIARRHEA, VOMITING, or MILD ABDOMINAL PAIN	29	Gonorrhea	40
Amebiasis	29	Syphilis	41
Giardiasis	29	SKIN	
Peptic Ulcer	30	SKIN PROBLEMS SPREAD BY PERSONAL CONTACT	42
Gastroenteritis	30	Impetigo	42
INTESTINAL WORMS	31	Scabies	42
Roundworms	31	Lice	43
Pinworms	32	Ringworm	43
Tapeworms	32	Tinea Versicolor	43
Hookworms	33		

DIAGNOSTIC AND PATIENT CARE GUIDES

SKIN PROBLEMS NOT USUALLY SPREAD BY PERSONAL CONTACT	44	Foreign Body in Ears, Nose, and Throat	55
Cellulitis	44	Nosebleeds	56
Boils and Abscesses	44	INFECTIOUS DISEASES	
Tropical Ulcer	44	INFECTIOUS DISEASES COMMONLY SPREAD THROUGH THE SOIL OR WATER	57
Herpes Simplex	45	Typhoid Fever	57
SKIN PROBLEMS NEVER SPREAD BY PERSONAL CONTACT	45	Tetanus in Children and Adults	57
Eczema	45	INFECTIOUS DISEASES COMMONLY SPREAD BY ANIMALS OR INSECTS	59
Onchocerciasis	46	Rabies	59
Contact Dermatitis	46	Malaria	59
Skin Reactions to Drugs	47	Louse-Borne Typhus	61
DENTAL, EYES, EARS, NOSE, AND THROAT		INFECTIOUS DISEASES COMMONLY SPREAD FROM PERSON TO PERSON	61
EYE PROBLEMS	48	Meningitis	61
Sty	48	Diphtheria	62
Conjunctivitis	48	Leprosy	62
Trachoma	48	OTHER COMMON PROBLEMS	
Cataracts	49	LOW BACK AND JOINT PROBLEMS	64
Vitamin A Deficiency	49	Low Back Pain Caused by Muscle Strain or Sprain of the Sacroiliac Joint	64
Foreign Body in the Eye	50	Low Back Pain Caused by Disk Disease	64
Cuts and Ulcers in the Cornea	50	Osteoarthritis	65
Eye Emergencies	51	Rheumatoid Arthritis	65
DENTAL AND MOUTH PROBLEMS	51	Septic Arthritis	66
Canker Sores	51	THYROID PROBLEMS	66
Gingivitis	51	Simple Goiter	66
Acute Ulcerative Gingivitis	51	Hypothyroidism	67
Tooth Decay	52	Hyperthyroidism	67
Dental Abscess	52	OTHER MEDICAL PROBLEMS	67
EAR, NOSE, SINUS, AND THROAT PROBLEMS	52	Headache	67
Acute Upper Respiratory Tract Infection	52	Stroke	68
Acute Otitis Media	53	Grand Mal Epilepsy	68
Chronic Otitis Media	53	Petit Mal Epilepsy	69
Mastoiditis	54	Anemia	70
External Otitis	54	Cancer	70
Wax in the Ears	54	Diabetes Mellitus	71
Acute Sinusitis	54		
Acute Bacterial Tonsillitis	55		

TABLE OF CONTENTS

MENTAL HEALTH AND ALCOHOL ABUSE PROBLEMS	71	Monilial Vaginitis	86
Acute Confusion	71	TUMORS OF THE FEMALE REPRODUCTIVE SYSTEM	86
Anxiety	72	Cancer of the Uterus or Cervix	86
Depression	72	Fibroid Tumor in the Uterus	86
Acute Alcohol intoxication	72	Tumor of the Ovary	87
Chronic A	72	Breast Lumps	87
TRAUMA AND EMERGENCY		MENSTRUAL CRAMPS, SIDE EFFECTS OF CONTRACEPTIVES, MENOPAUSE, AND ATROPHIC VAGINITIS	
SHOCK AND UNCONSCIOUSNESS	74	Menstrual Cramps	87
Shock	74	Side Effects of Contraceptives	87
Unconsciousness	75	Menopause	88
BLOCKED AIRWAY, ACUTE RESPIRATORY FAILURE, SNAKE BITE, AND POISONING	75	Atrophic Vaginitis	88
Blocked Airway	75	PRENATAL CARE	
Acute Respiratory Failure	76	PATIENT CARE FOR COMMON CONDITIONS DURING PREGNANCY	89
Snake Bite	76	Morning Sickness	89
Poisoning	77	Heartburn	89
BLEEDING AND LACERATIONS	78	Constipation	89
Bleeding	78	Hemorrhoids	89
Lacerations	78	Vaginitis	89
FRACTURES, SPRAINS, DISLOCATIONS, AND BURNS	80	Pain or Burning on Urination	90
Fractures	80	Anemia	90
Sprains	80	Chronic Cough	90
Dislocations	80	Swollen, Twisted Veins	90
Burns	81	Backache	90
TRAUMA TO THE EYE, HEAD, SPINAL COLUMN, CHEST, AND ABDOMEN	82	Shortness of Breath	91
Trauma to the Eye	82	PREGNANCY PROBLEMS	91
Trauma to the Head	82	Severe Anemia in Pregnancy	91
Trauma to the Spinal Column	83	Diabetes in Pregnancy	91
Trauma to the Chest	83	Heart Disease in Pregnancy	91
Trauma to the Abdomen	84	Ectopic Pregnancy	92
PROBLEMS OF WOMEN		Septic Abortion	92
COMMON INFECTIONS OF THE FEMALE REPRODUCTIVE SYSTEM	85	Preeclampsia and Eclampsia in Pregnancy	92
Pelvic Inflammatory Disease	85	Fetal Death	93
Non-Specific Vaginitis	85	Bleeding Early in Pregnancy	93
Trichomonal Vaginitis	85	Bleeding Late in Pregnancy	93
		Malaria in Pregnancy	94
		Sickle Cell Disease in Pregnancy	94

LABOR AND DELIVERY

COMMON PROBLEMS OF LABOR AND DELIVERY 95

Fetal Distress 95
 Maternal Distress 95
 Urine in the Bladder during Labor 95
 Premature Labor 95
 Incomplete Fetal Rotation 96
 Small or Abnormally Shaped Pelvis 96
 Early Rupture of the Bag of Waters 96
 Retained Placenta 96
 Prolonged Labor 97
 Breathing Problems of a Newborn 97

ABNORMAL PRESENTATIONS DURING DELIVERY 97

Face-Up Presentation 97
 Face Presentation 98
 Breech Presentation 98
 Transverse Presentation 98
 Multiple Pregnancy 98

EMERGENCIES DURING LABOR AND DELIVERY 98

Prolapse of the Cord 98
 Rupture of the Uterus 99
 Preeclampsia and Eclampsia during Labor 99
 Bleeding during Labor 100
 Postpartum Bleeding 100
 Emergencies in a Newborn 100

POSTNATAL CARE

POSTNATAL PROBLEMS 101

Swollen Breasts 101
 Lack of Breast Milk 101
 Hemorrhoids 101

OTHER POSTNATAL PROBLEMS 102

Cracks on Nipples 102
 Breast Abscess 102
 Puerperal Sepsis 102
 Unrepaired Perineal Tears 103
 Mother with a Dead Baby 103

COMMON PROBLEMS OF THE NEWBORN 104

Cradle Cap 104
 Diaper Rash 104
 Colds in the Newborn 104
 Simple Jaundice in the Newborn 104
 Simple Swelling of the Scalp and Bleeding into the Scalp in the Newborn 105

OTHER PROBLEMS OF THE NEWBORN 105

Fractures in the Newborn 105
 Diarrhea in the Newborn 105
 Fever in the Newborn 105
 Low Birth Weight 105
 Abnormal Jaundice in the Newborn 106
 A Newborn without a Mother 106

DISEASES OF INFANTS AND CHILDREN

PROBLEMS OF THE NEWBORN 107

Tetanus of the Newborn 107
 Septicemia in the Newborn 107
 Infected Umbilical Cord 108
 Bleeding Umbilical Cord 108
 Gonococcal Conjunctivitis of the Newborn 108
 Thrush in the Newborn 109

MALNUTRITION 109

Malnutrition 109

DIARRHEA AND DEHYDRATION 110

Diarrhea and Dehydration 110

COMMON INFECTIONS OF CHILDREN 112

Croup 112
 Whooping Cough 112
 Measles 113
 Mumps 113
 Chicken Pox 113

PROBLEMS OF INFANTS AND CHILDREN 114

Poliomyelitis 114
 Rheumatic Fever 114
 Sickle Cell Anemia 115
 Osteomyelitis 115

TABLE OF CONTENTS

CHILD SPACING		INTRAUTERINE DEVICES (IUDs)	118
NATURAL METHODS	116	ORAL CONTRACEPTIVES	119
Abstinence	116	PERMANENT METHODS	119
Male Withdrawal	116	Vasectomy	119
Lactation	116	Tubectomy	120
Mucus Ovulation	116		
Rhythm	117		
Temperature Change	117		
CHEMICAL AND BARRIER METHODS	117		
Spermicides	117		
Condoms	118		
Diaphragm	118		

ALPHABETICAL LISTING OF DISEASES AND CONDITIONS

- Abdomen, Acute 35
 Abdomen, Trauma to the 84
 Abnormal Jaundice in the
 Newborn 106
 Abortion, Septic 92
 Abscess, Breast 102
 Abscess, Dental 52
 Abscesses, Boils and 44
 Abstinence 116
 Acute Abdomen 35
 Acute Alcohol Intoxication 72
 Acute Appendicitis 35
 Acute Bacterial Tonsillitis 55
 Acute Bronchitis 22
 Acute Confusion 71
 Acute Otitis Media 53
 Acute Respiratory Failure 76
 Acute Sinusitis 54
 Acute Ulcerative Gingivitis 51
 Acute Upper Respiratory Tract
 Infection 52
 Airway, Blocked 75
 Alcohol Intoxication, Acute 72
 Alcoholism, Chronic 72
 Amebiasis 29
 Anal Fissures 36
 Anaphylactic Shock 74
 Anemia 70
 Anemia during Pregnancy 90
 Anemia in Pregnancy, Severe 91
 Anemia, Sickle Cell 115
 Angina Pectoris 26
 Animal Bite 79
 Anxiety 72
 Appendicitis, Acute 35
 Arthritis, Osteo- 65
 Arthritis, Rheumatoid 65
 Arthritis, Septic 66
 Asthma, Bronchial 23
 Atrophic Vaginitis 88

 Backache during Pregnancy 90
 Back Pain Caused by Disk Disease,
 Low 64

 Back Pain Caused by Muscle Strain or
 Sprain of the Sacroiliac Joint,
 Low 64
 Bacterial Tonsillitis, Acute 55
 Bag of Waters,
 Early Rupture of the 96
 Birth Weight, Low 105
 Bite, Animal 79
 Bite, Human 79
 Bite, Snake 76
 Bladder during Labor, Urine in the 95
 Bleeding 78
 Bleeding into the Scalp in the Newborn,
 Simple Swelling of the Scalp
 and 105
 Bleeding during Labor 100
 Bleeding Early in Pregnancy 93
 Bleeding Late in Pregnancy 93
 Bleeding, Postpartum 100
 Bleeding Umbilical Cord 108
 Blocked Airway 75
 Block, Intestinal 35
 Boils and Abscesses 44
 Breast Abscess 102
 Breast Lumps 87
 Breast Milk, Lack of 101
 Breasts, Swollen 101
 Breath during Pregnancy,
 Shortness of 91
 Breathing Problems of a Newborn 97
 Breech Presentation 98
 Bronchial Asthma 23
 Bronchitis, Acute 22
 Bronchitis, Chronic, and
 Emphysema 23
 Burning on Urination during Pregnancy,
 Pain or 90
 Burns 81

 Cancer 70
 Cancer of the Uterus or Cervix 86
 Canker Sores 51
 Cataracts 49
 Cellulitis 44

ALPHABETICAL LISTING OF DISEASES AND CONDITIONS

- Cervix, Cancer of the Uterus or 86
 Chest, Trauma to the 83
 Chicken Pox 113
 Chronic Alcoholism 72
 Chronic Bronchitis and
 Emphysema 23
 Chronic Cough during Pregnancy 90
 Chronic Otitis Media 53
 Cirrhosis 34
 Colds in the Newborn 104
 Condoms 118
 Confusion, Acute 71
 Congestive Heart Failure 25
 Conjunctivitis 48
 Conjunctivitis of the Newborn,
 Gonococcal 108
 Constipation during Pregnancy 89
 Contact Dermatitis 46
 Contraceptives, Oral 119
 Contraceptives, Side Effects of 87
 Cord, Bleeding Umbilical 108
 Cord, Infected Umbilical 108
 Cord, Prolapse of the 98
 Cornea, Cuts and Ulcers in the 50
 Cough during Pregnancy, Chronic 90
 Cough, Whooping 112
 Cracks on Nipples 102
 Cradle Cap 104
 Cramps, Menstrual 87
 Croup 112
 Cuts and Ulcers in the Cornea 50

 Dead Baby, Mother with a 103
 Death, Fetal 93
 Decay, Tooth 52
 Deficiency, Vitamin A 49
 Dehydration, Diarrhea and 110
 Dental Abscess 52
 Depression 72
 Dermatitis, Contact 46
 Diabetes in Pregnancy 91
 Diabetes Mellitus 71
 Diaper Rash 104
 Diaphragm 118
 Diarrhea and Dehydration 110

 Diarrhea in the Newborn 105
 Diphtheria 62
 Disk Disease, Low Back Pain
 Caused by 64
 Dislocations 80
 Distress, Fetal 95
 Distress, Maternal 95

 Early Rupture of the Bag of Waters 96
 Ears, Foreign Body in 55
 Ears, Wax in the 54
 Eclampsia during Labor,
 Preeclampsia and 99
 Eclampsia in Pregnancy,
 Preeclampsia and 92
 Ectopic Pregnancy 92
 Eczema 45
 Effusion, Pleural 24
 Emergencies, Eye 51
 Emergencies in a Newborn 100
 Emphysema, Chronic Bronchitis
 and 23
 Enlarged Prostate Gland 40
 Epilepsy, Grand Mal 68
 Epilepsy, Petit Mal 69
 External Otitis 54
 Eye Emergencies 51
 Eye, Foreign Body in the 50
 Eye, Trauma to the 82

 Face Presentation 98
 Face-Up Presentation 97
 Fetal Death 93
 Fetal Distress 95
 Fever in the Newborn 105
 Fever, Rheumatic 114
 Fever, Typhoid 57
 Fetal Rotation, Incomplete 96
 Fibroid Tumor in the Uterus 86
 First Degree Burns 81
 Fissures, Anal 36
 Foreign Body in the Ears,
 Nose, and Throat 55
 Foreign Body in the Eye 50
 Fractures 80
 Fractures in the Newborn 105

DIAGNOSTIC AND PATIENT CARE GUIDES

- Gastroenteritis 30
 Giardiasis 29
 Gingivitis 51
 Gingivitis, Acute Ulcerative 51
 Goiter, Simple 66
 Gonococcal Conjunctivitis
 in the Newborn 108
 Gonorrhea 40
 Grand Mal Epilepsy 68
- Headache 67
 Head, Trauma to the 82
 Heartburn during Pregnancy 89
 Heart Disease in Pregnancy 91
 Heart Disease, Rheumatic 26
 Heart Failure, Congestive 25
 Hemorrhoids 36
 Hemorrhoids during Pregnancy 89
 Hemorrhoids, Postnatal 101
 Hepatitis, Viral 34
 Herpes Simplex 45
 Hookworms 33
 Human Bite 79
 Hypertension 27
 Hyperthyroidism 67
 Hypothyroidism 67
- Impetigo 42
 Incomplete Fetal Rotation 96
 Infarction, Myocardial 27
 Infected Umbilical Cord 108
 Infection, Acute Upper Respiratory
 Tract 52
 Infection, Urinary Tract 38
 Inflammatory Disease, Pelvic 85
 Intestinal Block 35
 Intoxication, Acute Alcohol 72
 Intrauterine Devices 118
- Jaundice in the Newborn,
 Abnormal 106
 Jaundice in the Newborn, Simple 104
- Kwashiorkor 109
- Labor, Bleeding during 100
 Labor, Premature 95
 Labor, Prolonged 97
 Lacerations 78
 Lack of Breast Milk 101
 Lactation 116
 Leprosy 62
 Lice 43
 Louse-Borne Typhus 61
 Low Back Pain Caused by
 Disk Disease 64
 Low Back Pain Caused by Muscle Strain
 or Sprain of the Sacroiliac Joint 64
 Low Birth Weight 105
 Lumps, Breast 87
- Malaria 59
 Malaria in Pregnancy 94
 Male Withdrawal 116
 Malnutrition 109
 Marasmus 109
 Mastoiditis 54
 Maternal Distress 95
 Measles 113
 Meningitis 61
 Menstrual Cramps 87
 Menopause 88
 Migraine Headache 67
 Milk, Lack of Breast 101
 Monilial Vaginitis 86
 Morning Sickness during
 Pregnancy 89
 Mother with a Dead Baby 103
 Mucus Ovulation 116
 Multiple Pregnancy 98
 Mumps 113
 Muscle Strain or Sprain of the Sacroiliac
 Joint, Low Back Pain Caused by 64
 Myocardial Infarction 27
- Nephritis 39
 Nephrotic Syndrome 39
 Newborn without a Mother 106
 Nipples, Cracks on 102
 Non-Specific Vaginitis 85

ALPHABETICAL LISTING OF DISEASES AND CONDITIONS

- Nosebleeds 56
 Nose, Foreign Body in 55
- Onchocerciasis 46
 Oral Contraceptives 119
 Osteoarthritis 65
 Osteomyelitis 115
 Otitis, External 54
 Otitis Media, Acute 53
 Otitis Media, Chronic 53
 Ovary, Tumor of the 87
- Pain or Burning on Urination
 during Pregnancy 90
 Pelvic Inflammatory Disease 85
 Pelvis, Small or Abnormally
 Shaped 96
 Peptic Ulcer 30
 Perineal Tears, Unrepaired 103
 Petit Mal Epilepsy 69
 Pinworms 32
 Placenta, Retained 96
 Pleural Effusion 24
 Pneumonia 22
 Poisoning 77
 Poliomyelitis 114
 Postpartum Bleeding 100
 Pox, Chicken 113
 Preeclampsia and Eclampsia during
 Labor 99
 Preeclampsia and Eclampsia in
 Pregnancy 92
 Pregnancy, Ectopic 92
 Pregnancy, Multiple 98
 Premature Labor 95
 Presentation, Breech 98
 Presentation, Face 98
 Presentation, Face-Up 97
 Presentation, Transverse 98
 Prolapse of the Cord 98
 Prolonged Labor 97
 Prostatitis 40
 Prostate Gland, Enlarged 40
 Puerperal Sepsis 102
- Rabies 59
- Rash, Diaper 104
 Reactions to Drugs, Skin 47
 Respiratory Failure, Acute 76
 Respiratory Tract Infection,
 Acute Upper 52
 Retained Placenta 96
 Rheumatic Fever 114
 Rheumatic Heart Disease 26
 Rheumatoid Arthritis 65
 Rhythm 117
 Ringworm 43
 Roundworms 31
 Rupture of the Bag of Waters,
 Early 96
 Rupture of the Uterus 99
- Sacroiliac Joint, Low Back Pain Caused
 by Muscle Strain or Sprain
 of the 64
 Scabies 42
 Scalp, Bleeding into the,
 in the Newborn 105
 Scalp, Simple Swelling of the,
 in the Newborn 105
 Scrotal Swelling 40
 Second Degree Burns 81
 Sepsis, Puerperal 102
 Septic Abortion 92
 Septic Arthritis 66
 Septicemia in the Newborn 107
 Severe Anemia in Pregnancy 91
 Shock 74
 Shock, Anaphylactic 74
 Shortness of Breath during
 Pregnancy 91
 Sickle Cell Anemia 115
 Sickle Cell Disease in Pregnancy 94
 Side Effects of Contraceptives 87
 Simple Goiter 66
 Simple Jaundice in the Newborn 104
 Simple Swelling of the Scalp
 and Bleeding into the
 Scalp in the Newborn 105
 Sinusitis, Acute 54
 Skin Reactions to Drugs 47
 Small or Abnormally Shaped Pelvis 96
 Snake Bite 76

DIAGNOSTIC AND PATIENT CARE GUIDES

- Sores, Canker 51
 Spermicides 117
 Spinal Column, Trauma to the 83
 Sprain of the Sacroiliac Joint, Low Back
 Pain Caused by Muscle
 Strain or 64
 Sprains 80
 Stones in the Urinary Tract 38
 Stroke 68
 Stry 48
 Swelling, Scrotal 40
 Swelling of the Scalp, Simple
 and Bleeding into the Scalp
 in the Newborn 105
 Swollen Breasts 101
 Swollen, Twisted Veins
 during Pregnancy 90
 Syphilis 41
- Tapeworms 32
 Tears, Unrepaired Perineal 103
 Temperature Change 117
 Tension Headache 67
 Tetanus in Children and Adults 57
 Tetanus of the Newborn 107
 Third Degree Burns 81
 Throat, Foreign Body in 55
 Thrush in the Newborn 109
 Tinea Versicolor 43
 Tonsillitis, Acute Bacterial 55
 Tooth Decay 52
 Trachoma 48
 Transverse Presentation 98
 Trauma to the Abdomen 84
 Trauma to the Chest 83
 Trauma to the Eye 82
 Trauma to the Head 82
 Trauma to the Spinal Column 83
 Trichomonal Vaginitis 85
 Tropical Ulcer 44
 Tubectomy 120
 Tuberculosis 24
 Tumor in the Uterus, Fibroid 86
 Tumor of the Ovary 87
- Twisted Veins during
 Pregnancy, Swollen 90
 Typhoid Fever 57
 Typhus, Louse-Borne 61
- Ulcerative Gingivitis, Acute 51
 Ulcer, Peptic 30
 Ulcers in the Cornea, Cuts and 50
 Ulcer, Tropical 44
 Umbilical Cord, Bleeding 108
 Umbilical Cord, Infected 108
 Umbilical Cord, Prolapse of the 98
 Unconsciousness 75
 Unrepaired Perineal Tears 103
 Upper Respiratory Tract
 Infection, Acute 52
 Urinary Tract Infection 38
 Urinary Tract, Stones in the 38
 Urination during Pregnancy, Pain or
 Burning on 90
 Urine in the Bladder during Labor 95
 Uterus, Fibroid Tumor in the 86
 Uterus or Cervix, Cancer of the 86
 Uterus, Rupture of the 99
- Vaginitis, Atrophic 88
 Vaginitis during Pregnancy 89
 Vaginitis, Monilial 86
 Vaginitis, Non-Specific 85
 Vaginitis, Trichomonal 85
 Vasectomy 119
 Veins during Pregnancy,
 Swollen, Twisted 90
 Viral Hepatitis 34
 Vitamin A Deficiency 49
- Waters, Early Rupture of the Bag of 96
 Wax in the Ears 54
 Weight, Low Birth 105
 Whooping Cough 112

Preface

Diagnostic and Patient Care Guides is a reference manual. Use it with the Formulary and Patient Care Procedures manual in your health center.

The Diagnostic and Patient Care Guides are based on the diseases and conditions that are described in the mid-level health worker training modules of the MEDEX Primary Health Care Series. The most characteristic symptoms and signs of each condition are described in the presenting complaint, medical history, and physical examination sections of the training modules. These are the symptoms and signs that are listed at the beginning of the Diagnostic and Patient Care Guide for each disease or condition in this manual.

Patient Care, which follows the Symptoms and Signs, provides a summary of the care that is recommended in the training modules. Because antibiotic dosages are required so frequently, they are summarized separately in the Guide for Calculating Antibiotic Dosages.

The conditions that are listed in the Diagnostic and Patient Care Guides are in nearly the same order as they appear in the training modules. This order may help you to locate the condition that you suspect the patient is suffering from. The diseases and conditions are also listed in an alphabetical table of contents. Review the symptoms and signs of the condition, as well as the patient care, before diagnosing and treating the patient.

Guide for Calculating Antibiotic Dosages

Guidelines for Use of Antibiotics

PENICILLIN

The Diagnostic and Patient Care Guides usually mention the type and amount of penicillin to use for treatment of specific diseases. However, in each case you must decide what is most appropriate for the patient you are treating.

The type and amount of penicillin that you give, and the method of giving it—oral, intramuscular, intravenous—depend upon several factors. These include the kind of illness the patient is suffering, the severity of the illness, the patient's body weight, and the likelihood that the patient will take the drug regularly.

A patient who is very ill requires high levels of penicillin in his blood stream. You can achieve these high levels by using benzylpenicillin G (crystalline penicillin G, or aqueous penicillin) either intravenously or intramuscularly. If you add oral probericid, the level of penicillin in the blood will remain high for several hours. However, by six to eight hours after the injection, the penicillin in the blood will fall to low levels again. For this reason, you must give injections every four to six hours. An exception to this is in the treatment of gonorrhea, which requires a very high level of penicillin in the blood, but for only a short period of time.

Most patients you treat in the clinic will not require benzylpenicillin G. Unless the patients are extremely ill, you can treat most illnesses such as pneumonia by giving intramuscular procaine penicillin G every twelve hours. Procaine penicillin G produces an adequate level of penicillin in the blood for twelve to twenty-four hours.

Oral penicillin V (phenoxymethylpenicillin) is absorbed from the intestines into the blood stream quite quickly. However, oral penicillin usually will not provide a high level of penicillin in the blood. And oral penicillin is effective only if the patient takes the tablets regu-

larly. Often, patients stop taking tablets as soon as they begin to feel better. Before you give the patient oral penicillin, you must decide whether the patient is likely to take the drug regularly.

An injection of benzathine penicillin produces low levels of penicillin in the blood. However, the penicillin remains in the body for several weeks after a single injection. This low level of penicillin, over a long period of time, is sufficient for the treatment of patients with bacterial tonsillitis or impetigo.

The dosages of penicillin shown in the following table are only a rough guide for you to follow. All doses are given in milligrams. For reference, note that 600 mg of benzylpenicillin G is equivalent to 1 million units, and 1000 mg of procaine penicillin G is equivalent to 1 million units.

You must keep epinephrine and a small syringe and needle on hand at all times at the health center. Do not administer antibiotics unless you have these supplies ready to use. If the patient suddenly develops the symptoms and signs of anaphylactic shock, carry out the following procedures.

- Place the patient flat on his back with his feet elevated about one-half meter above the level of his head. Loosen his collar and make certain that his airway is open.
- Give the patient an injection of 1:1000 solution of epinephrine SC. Use the following dosages:

Adults and children	
40 kg and over	0.5 cc
Children	
20 to 40 kg	0.3 cc
10 to 20 kg	0.2 cc
10 kg and under	0.1 cc

- c. Record the patient's pulse, respiratory rate, and blood pressure every five minutes.
- d. If possible, begin an intravenous infusion of normal saline solution as soon as you have given the patient epinephrine.
- e. If the signs of shock continue, give the patient a second injection of epinephrine in five to ten minutes. Follow this with further injections as necessary. Use the same dosage of epinephrine as the first injection.
- f. If the patient has swelling and itching of the skin, give him 10 mg of chlorpheniramine IM. Give children 0.5 mg per kg of estimated body weight, up to a maximum dosage of 10 mg.
- g. If signs of shock continue for more than thirty minutes, transfer the patient to a hospital as quickly as possible. Accompany him to the hospital so that you can continue to monitor his vital signs and give him epinephrine as required.

Treat less severe reactions with an anti-allergy drug. See Patient Care Guide for Skin Reactions to Drugs.

AMPICILLIN

Ampicillin is effective against many of the same bacteria as penicillin. Give patients who have very high fever and appear to be very ill ampicillin intramuscularly. You may treat less seriously ill patients with oral ampicillin. The patient care guides for individual diseases indicate the conditions for which you should use ampicillin.

Because ampicillin is very similar to penicillin, you should not use ampicillin in patients who have had a reaction following penicillin.

ERYTHROMYCIN

Erythromycin is less powerful than many of the other antibiotics. However, oral erythromycin is quickly absorbed into the blood stream. Use erythromycin as a substitute for penicillin when your patient is allergic to penicillin. Diagnostic and Patient Care Guides for specific diseases give the indications for use of erythromycin.

CHLORAMPHENICOL (Chloromycetin)

Chloramphenicol is a very powerful antibiotic. It is effective when given to patients with typhoid fever. It is also effective in several other conditions, including septic arthritis, croup, and meningitis in children under seven years of age.

Chloramphenicol can cause very severe reactions. It can cause a severe anemia that can lead to the death of the patient. Therefore, you must use the drug only for the conditions mentioned above. Oral chloramphenicol is quickly absorbed from the intestines.

Do not use chloramphenicol in pregnant women who are near to term or women who are breast-feeding their infants. Do not use chloramphenicol in infants under two months of age. The drug is very dangerous to small infants.

TETRACYCLINE

Tetracycline is a useful antibiotic for patients with urinary tract infection, prostatitis, chronic bronchitis, typhus, bacterial gastroenteritis, and trachoma. The drug is quickly absorbed through the intestines. Therefore, you need not give the drug intramuscularly.

Do not give tetracycline to women who are pregnant or to women who are breast-feeding their infants. Do not use this drug in children under the age of eight unless no other drug is available. The drug can cause a permanent stain of the teeth. However, this problem should not occur if you give the drug for only a short course of five days.

ANTIBIOTIC DOSAGES

Use the following dosages for the antibiotics shown. Give each dose shown every six hours. The dose is based upon the patient's estimated body weight. Continue the antibiotics for the length of time specified in the patient care guide for the condition that you are treating.

DIAGNOSTIC AND PATIENT CARE GUIDES

	ADULTS AND CHILDREN 40 KG AND OVER	CHILDREN 20 TO 40 KG	CHILDREN 10 TO 20 KG	CHILDREN 5 TO 10 KG	CHILDREN UNDER 5 KG
Benzylpenicillin G Intramuscular (crystalline penicillin G, aqueous penicillin)	500 mg	300 mg	200 mg	75 mg	75 mg
Procaine penicillin G Intramuscular every twelve hours	900 mg	600 mg	300 mg	150 mg	75 mg

WARNING: DO NOT GIVE PROCAINE PENICILLIN G TO NEWBORNS.

Penicillin V Oral tablets or suspension (phenoxymethyl penicillin)	500 mg	250 mg	125 mg	60 mg	60 mg
Ampicillin Mild to moderate infection Oral capsules or suspension	750 mg	500 mg	250 mg	125 mg	60 mg
Severe infection Intramuscular	1500 mg	1000 mg	500 mg	250 mg	125 mg

WARNING: DO NOT USE AMPICILLIN IN PATIENTS WITH ALLERGY TO PENICILLIN.

Erythromycin Oral capsules or suspension	500 mg	250 mg	200 mg	100 mg	50 mg
Chloramphenicol Oral capsules or suspension	500 mg	250 mg	150 mg	75 mg	

WARNING: DO NOT GIVE CHLORAMPHENICOL TO INFANTS UNDER TWO MONTHS OF AGE. USE ONLY FOR CONDITIONS INDICATED IN THE DIAGNOSTIC AND PATIENT CARE GUIDES AND FORMULARY.

Tetracycline Oral tablets Mild to moderate infection	250 mg	125 mg			
Severe infection	500 mg	250 mg			

WARNING: DO NOT USE TETRACYCLINE IN CHILDREN UNDER EIGHT YEARS. DO NOT USE TETRACYCLINE IN PREGNANT WOMEN OR NURSING MOTHERS, UNLESS YOU ARE TREATING LIFE-THREATENING ILLNESS.

Guide for When to Give Immunizations

Follow this schedule for giving children immunizations against common childhood diseases. Refer to the Formulary for a specific discussion of dosages, site of injection, side effects, warnings, storage, and patient instructions.

AGE	IMMUNIZATION
Newborn	BCG
3 months	DPT 1 Oral polio vaccine 1
5 months	DPT 2 Oral polio vaccine 2

7 months	DPT 3 Oral polio vaccine 3
9 months and older	Measles vaccine
18 months	DPT 4 Oral polio vaccine 4
When the child enters primary school (5 to 6 years)	DT Oral polio vaccine Follow the national guidelines of your country for giving a second BCG vaccination to children entering school.

Guide for Reducing Fever

Most infectious diseases cause the body temperature to rise. Fever is an important sign of illness. It also makes the patient feel uncomfortable. When the fever is very high, it can lead to convulsions.

Advise the patient to take aspirin when he develops a fever or feels uncomfortable. Use the following dosages:

	MAXIMUM	IN 24 HOURS
Adults and children 10 years and over	600 mg every 4 hrs	3.6 g
Children 5 to 10 years	300 mg every 4 hrs	1.8 g
2 to 5 years	150 mg every 4 hrs	900 mg
Under 2 years	Do not use	

Warn the patient that aspirin may irritate his stomach. Tell him that if aspirin causes irri-

tation or discomfort, he should take the aspirin with some food, water, or milk.

When the fever is very high, sponge the patient. Demonstrate the technique to the parents, and encourage them to sponge their child until he feels cooler. When you sponge younger children, remove their clothing. Use a large pan filled with water at room temperature. Obtain several towels or large pieces of cloth. Soak the towels in the water, and then cover the child with the towels. Cover his forehead as well. Every three to four minutes, put the towels back into the pan to rinse them out. Then put the towels on the child's body again. This treatment will reduce the child's fever within thirty to sixty minutes.

When children develop fever, parents often dress them very warmly in order to prevent a chill. However, this prevents the body from losing heat. Encourage the family to remove the child's clothing and to keep the child out of drafts.

Guide for Calculating How Much Intravenous Fluid to Give a Patient

Types of Fluids

Your Formulary lists four types of intravenous fluid. Their uses depend upon the kind of problem that the patient has. The following brief descriptions will guide you in the proper uses of intravenous fluids.

NORMAL SALINE SOLUTION

Normal saline solution is a solution of salt in water. The amount of salt, or sodium chloride, is 0.9% by weight. The concentration of sodium in this solution is almost identical to the concentration of sodium in blood. For this reason, such a solution is valuable when a patient has lost blood rapidly and is in danger of shock. The salt solution will tend to remain inside the blood vessels and help to keep the blood pressure from falling.

HALF-NORMAL SALINE SOLUTION IN 5% DEXTROSE

This solution contains half the amount of sodium that is found in the normal saline solution. In addition, it contains sugar. This solution is useful in many situations in which the patient is not in immediate danger of shock. Use it when the patient requires intravenous fluids to replace the salt and water that he has lost through sweat and urine. The sugar provides useful energy for the body, especially when the patient is unable to take food by mouth.

RINGER'S LACTATE SOLUTION

In addition to sodium chloride, this solution contains some potassium, calcium, and bicarbonate. It is a useful solution when the patient has lost fluids through vomiting or diarrhea. It contains slightly less sodium than normal sa-

line solution. But it contains other important minerals that the body needs because the patient loses them in vomit and stool.

5% DEXTROSE SOLUTION

This is the solution that you will use most frequently. Whenever the patient requires fluid to replace the fluids lost through lungs, skin, and kidneys, you should replace most of the fluid with a sugar solution. The total amount of fluid to be replaced, and the amount to be replaced by a normal saline solution is shown in the table below. From this table you can see that the body requires mainly water to maintain itself. However, never give an intravenous infusion of sterile water. Sterile water alone, when injected into the blood stream, will destroy the blood cells. However, the sugar prevents this risk and also furnishes the body with an important source of energy.

Amount of Fluid Required

The body loses water and various minerals and salts through the skin, through the lungs, and through the kidneys. Normal daily consumption of food and water replaces these substances. Under normal conditions, and when a person is in good health, the body obtains what it needs and easily discards what it does not need. The water and minerals that the body needs each day are known as MAINTENANCE requirements. They maintain the body in good health.

When a person is ill, the maintenance requirements for water and for minerals are often higher than at other times. With fever, the body uses more water than normally. Water is lost through the lungs and through the skin to keep the body cool. When a person breathes rapidly and heavily, he loses large amounts of

GUIDE FOR CALCULATING HOW MUCH INTRAVENOUS FLUID TO GIVE A PATIENT

water through the lungs.

When you must replace fluids and minerals that a person has lost because of bleeding, severe vomiting or diarrhea, or a severe burn, these fluids and minerals are called **REPLACEMENT** fluids and minerals. The body needs these in addition to the **MAINTENANCE** requirements. Replacement requirements are discussed in the patient care guides for specific conditions

If a person is unable to take fluids by mouth, because he is unconscious or too ill to swallow, then you must provide the fluids intravenously. The amount of fluid and minerals that the patient requires will depend upon many factors. However, the following table provides a

rough guide. The table shows the average amount of fluid and salt that will meet the **MAINTENANCE** requirements over a twenty-four hour period. The table is based upon the needs of people with different body weights. Children require proportionately more fluids than adults.

Use the following table to guide you in estimating how much intravenous fluid the patient needs in twenty-four hours. Give the recommended amount of normal saline, Ringer's lactate, or 5% dextrose in 1/2 normal saline. Subtract this amount from the total ml of fluid. Give the remaining ml of fluid as 5% dextrose in water.

BODY WEIGHT	TOTAL ML OF FLUID	ML OF NORMAL SALINE OR RINGER'S LACTATE	ML OF 5% DEXTROSE IN 1/2 NORMAL SALINE
60 kg	2500 ml	500 ml	1000 ml
45 kg	1800 ml	350 ml	700 ml
30 kg	1500 ml	250 ml	500 ml
15 kg	1000 ml	175 ml	350 ml
10 kg	800 ml	140 ml	280 ml
5 kg	600 ml	120 ml	240 ml
2.5 kg	400 ml	100 ml	200 ml

If the patient produces less than 500 ml of urine over a twenty-four hour period, or if he has signs of dehydration, then you must increase the amount of fluid that he is receiving. Unless the patient has a disease that prevents his kidneys from making urine, the kidneys will eliminate extra water from the body.

However, you can easily overload the patient with salt so that he develops signs of heart failure. When the patient is receiving intravenous fluids, always watch him closely for evidence of heart failure, as well as for evidence of too little fluid. Do not continue the intravenous fluids any longer than is absolutely necessary.

RESPIRATORY AND HEART

Respiratory System Problems

PNEUMONIA

SYMPTOMS

Severe cough
High fever, often with chills
Possible chest pain with deep breathing or coughing
Yellow sputum, sometimes with blood in it
Difficulty breathing

SIGNS

High fever
Increased breathing rate
Flaring nostrils and intercostal retractions
Uneven expansion of chest, with tenderness on one side

Flat percussion note over areas of congestion
Rales

Abnormal bronchial breath sounds
Cyanosis

PATIENT CARE

- Observe the patient for at least twenty-four hours after you start treatment. Record his temperature, pulse, and respiratory rate every four hours. If the patient shows signs of improvement after twenty-four hours, he may return home. Observe seriously ill patients for a longer time.
- Use an antibiotic to treat the patient. If the patient is not allergic to penicillin, start procaine penicillin G IM. If the patient improves after twenty-four to forty-eight hours, switch to oral penicillin V. If the patient is allergic to penicillin, use erythromycin. See Guide for Calculating Antibiotic Dosages.
- Give the patient extra fluids. Encourage the patient to drink at least one glass of water, milk, tea, or juice every one to two hours while he is awake.
- Control the fever. If the patient's temperature is over 38°C, give him 600 mg of aspi-

rin every four hours. Give a child 60 mg of aspirin per year of age, up to ten years of age. If the fever is over 39°C, bring it down by using wet towels. See Guide for Reducing Fever.

- If the patient's coughing is severe, give him a cough expectorant, such as glyceryl guaiacolate.
- Improve the patient's nutrition. If the patient is an infant, encourage the mother to continue breast-feeding.
- If the patient has not started to improve after twenty-four to forty-eight hours of treatment, refer him to a hospital. Refer him immediately if his condition grows worse.

ACUTE BRONCHITIS

SYMPTOMS

Severe cough
Green or yellow sputum
Dry, tight throat with fever
History of general discomfort, fever, and runny nose

SIGNS

Rhonchi
Wheezing
Redness of the nasal mucosa
Red throat
Nasal discharge
No rales
No change in percussion note
No difficulty breathing

PATIENT CARE

- Encourage the patient to rest while he is suffering from acute bronchitis.
- Encourage the patient to drink extra fluids. One glass of water, juice, tea, or other fluid

every one to two hours will help the body fight the infection.

- c. You can reduce the patient's fever and discomfort by giving him aspirin. Give 600 mg every four hours to adults. Give 60 mg per year of age to children under ten years of age.
- d. Use a cough expectorant to soothe the patient's throat and ease the coughing. One to two teaspoons of glyceryl guaiacolate every four hours may help.
- e. Encourage the patient to stop smoking. Bronchitis is more frequent and more severe in patients who smoke.
- f. If the patient is an infant, or if the patient is an older person who has had lung disease earlier, use an antibiotic to treat the acute bronchitis. If the patient is not allergic to penicillin, use procaine penicillin G. Otherwise use erythromycin. Continue the antibiotic treatment for five days. See Guide for Calculating Antibiotic Dosages.

CHRONIC BRONCHITIS AND EMPHYSEMA

SYMPTOMS

Morning cough
Coughs up variable quantity of greenish sputum daily
History of smoking

History of pneumonia or acute bronchitis
With emphysema, gradual onset of shortness of breath

SIGNS

Rhonchi and wheezing on auscultation
With emphysema, prolonged expiration and barrel chest

PATIENT CARE

- a. If the patient smokes, tell him that stopping smoking is the most important preventive action that he can take.
- b. Encourage the patient to drink extra fluids. These extra fluids will help to thin the secretions in the chest so that the patient can cough them up more easily. Use a cough expectorant to soothe the patient's throat and

ease the coughing. One to two teaspoons of glyceryl guaiacolate every four hours may help.

- c. When the patient develops evidence of acute bronchitis, treat him with an antibiotic. Use ampicillin if the patient is not allergic to it. Otherwise use erythromycin. Continue the antibiotic for one week. See Guide for Calculating Antibiotic Dosages.

PREVENTION

- a. Irritation of the airways from tobacco smoke is a major cause of chronic bronchitis. Urge the patient not to smoke.
- b. Inspect the patient's place of work. Dust, dirt, or fumes will make his problem worse.

BRONCHIAL ASTHMA

SYMPTOMS

Sudden onset of difficulty breathing
Possible coughing and wheezing aloud during attack
History of similar attacks
Family history of allergy

SIGNS

Expanded chest
Difficulty forcing air out of lungs
Prolonged expiration
Wheezing on expiration
Fever with associated respiratory tract infection

PATIENT CARE

- a. Encourage the patient to drink liquids. At least one glass of water or other liquid every hour will help to make the secretions in the lungs thinner and easier to cough up. This is the most important step in treatment.
- b. Give the patient an injection of 1:1000 solution of epinephrine SC. Use the following dosages:

Adults and children 40 kg and over	0.5 cc
Children 20 to 40 kg	0.3 cc
Children 10 kg to 20 kg	0.2 cc
Children 10 kg and under	0.1 cc

Record the time when you give the patient epinephrine. Also record the patient's pulse

and respiratory rates. If wheezing continues, you may repeat the dosage of epinephrine at twenty minute intervals for a total of three injections. Do not give the patient any more epinephrine if his pulse exceeds 150 beats per minute.

- c. Give the patient oral aminophylline (theophylline ethylenediamine compound) every six hours. Use the following dosages:

Adults	200 mg
Children	
20 to 40 kg	100 mg
10 to 20 kg	50 mg

- d. If you find signs of a bacterial infection in the throat or lungs, use an antibiotic. Avoid penicillin or ampicillin. Use tetracycline or erythromycin. Treat the patient for six days. See Guide for Calculating Antibiotic Dosages.
- e. Refer the patient to a hospital if the wheezing does not decrease after twelve to twenty-four hours or if it becomes worse. Patients with severe asthma can quickly become dehydrated and exhausted. Then the condition is much more difficult to correct, even in a hospital.

PLEURAL EFFUSION

SYMPTOMS

Usually without symptoms
 Sharp chest pain when inflammation is present
 Shortness of breath if effusion is very large or accompanied by pain
 History of tuberculosis, pneumonia, congestive heart failure, or chest trauma

SIGNS

Reduced movement of the affected side of chest
 Uneven expansion of chest
 On percussion, flat sound over the effusion
 On auscultation, no breath sounds over the effusion

PATIENT CARE

If you suspect that the patient has a pleural effusion, refer him to a hospital for further evaluation and treatment.

TUBERCULOSIS

SYMPTOMS

Usually without symptoms, especially in children
 Cough, with yellow or green sputum
 Fever in late afternoon and sweating at night
 Loss of appetite and loss of weight
 Blood in sputum
 Tiredness

SIGNS

Often no signs
 Requires X-ray or sputum examination
 Weight loss
 Chronic cough
 In children, enlarged, painless lymph glands in the neck

PATIENT CARE

Tuberculosis of the lungs

- a. Make the diagnosis of tuberculosis properly. If you suspect tuberculosis, collect the sputum to obtain a smear, or refer the patient for an X-ray examination. See Patient Care Procedure for Collection of Sputum from a Suspected Tuberculosis Patient. Do not start treatment until the diagnosis is confirmed.
- b. Patients often have difficulty completing a course of treatment for tuberculosis successfully. Help your patient to understand the importance of taking the drugs regularly for the full length of time. Many patients require treatment for twenty-four months or more. Treat the patients with the drugs that the Tuberculosis Control Program in your country recommends. Many drug combinations have been used in the treatment of tuberculosis.

Frequently, streptomycin is given intramuscularly for the first eight to twelve weeks after diagnosis of pulmonary tuberculosis. The drug must be given intramuscularly. This treatment requires the patient's daily attendance at the clinic.

At the same time, the patient is usually started on two additional drugs by mouth. Most frequently, isoniazid is one of the two drugs. Paraminosalicylic acid or thiacezone may be the other drug. See the Formula for drug dosages and side effects.

15

Review the toxic side effects of these drugs. Warn the patient about the side effects. Tell him to return to see you if he suffers severe or continued side effects. You can temporarily reduce the amount of the drug, or you can stop the drug and start giving the patient another drug. These are two alternatives. Too often, the patient simply stops taking the drug and stops coming to the clinic.

Many other drugs can be used in the treatment of tuberculosis. However, they are most frequently used when the recommended drugs have failed. The secondary drugs are far more expensive and only slightly more effective.

- c. Urge the patient to eat a nutritious diet.
- d. Follow the progress of the patient on a monthly basis.

Weigh the patient monthly. Continued weight loss is a sign that the disease is not under control and is worsening.

Ask about blood in sputum; severity of coughing; fever; and appetite.

Ask the patient to bring the drug that he still has at home each time he visits you. Calculate the number of pills that he should have taken and the number he has actually taken. This will help you determine how regularly the patient is taking the drug.

Ask the patient about any new symptoms since he began treatment. Check to see if the drug that he is taking could be causing the new symptoms.

- e. Examine all members of the patient's family for tuberculosis. If they have symptoms that suggest tuberculosis, refer them for a chest X-ray or sputum examination.

Tuberculosis elsewhere in the body

If you suspect that the patient may have tuberculosis elsewhere in the body, refer him to a hospital for evaluation.

PREVENTION

- a. Examine all the close contacts of the patient at least every three months. Refer any contact with suspected tuberculosis for a chest X-ray or sputum examination.
- b. BCG vaccine is sometimes recommended for children who have not been infected.

Follow national guidelines for its use.

- c. Keep the possibility of tuberculosis in your mind each time you see a new patient. Tuberculosis is difficult to detect unless you suspect that it is present.

Heart Problems

CONGESTIVE HEART FAILURE

SYMPTOMS

Shortness of breath with exercise or during the night
Swelling of ankles in afternoon and evening
Possible swelling of the lower back
Cough with thin, clear sputum
Tiredness and weakness

SIGNS

Pitting edema of the ankles or lower part of back
Enlarged neck veins
Increased pulse rate while at rest
Shortness of breath during exertion
Rales at the base of the lungs

PATIENT CARE

If the patient has mild congestive heart failure, follow these steps.

- a. Start the patient on 25 mg of oral hydrochlorothiazide twice a day. If he has swelling of his ankles, the drug may help to reduce the swelling. Try to reduce the drug to 25 mg every other day as his condition improves.
- b. Tell him to stop using any salt in his food, during preparation of the food or at the table.
- c. Teach the patient and his family about congestive heart failure. Emphasize the following points.

The condition cannot be cured. But the patient can live comfortably for many years if he rests each day and follows the recommended treatment.

The patient must take the drug regularly and for the rest of his life. If he stops taking

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the drug, the condition will return and become worse.

Salt makes the condition worse. The patient should not eat any salt. He should prepare his food without salt.

The patient may rest more comfortably at night if he sleeps with his head raised on two or three pillows. Raising his head will prevent water from collecting in his lungs and making him short of breath.

- d. Refer the patient to a hospital for further evaluation as soon as possible.
- e. Follow the patient regularly in the clinic. At each visit, ask if the patient has swelling of his ankles, shortness of breath while working or at night, cough, weakness, or chest pain.

Examine the patient and record his weight, the presence or absence of edema, signs of fluid in his lungs, heart rate, heart rhythm, other signs of congestive heart failure, and blood pressure.

If the patient is taking digitalis, check for signs of too little or too much of this drug. Signs of too little digitalis include pulse rate over ninety beats per minute and fluid collecting in the body. Signs of too much digitalis include pulse rate under sixty beats per minute, nausea, vomiting, headache, and irregular heart beat.

If the patient is taking hydrochlorothiazide, he may lose potassium from his body. Low levels of potassium in the body cause muscle weakness and worsening of the heart failure. Encourage the patient to eat foods that are rich in potassium. These foods include whole wheat, soybeans, beans, peas, lentils, peanuts, seaweed, bananas, and green vegetables.

For severe heart failure, transfer the patient to a hospital as quickly as possible so that the heart failure can be treated and brought under control.

PREVENTION

- a. Routinely check the blood pressure of adults you see in the clinic. Early detection and treatment of high blood pressure will delay the development of heart failure.
- b. Look for signs of severe anemia. Anemia can also lead to heart failure.

RHEUMATIC HEART DISEASE

SYMPTOMS

Cough
Shortness of breath on exertion
Swollen ankles
Patient between twenty and forty years old
Rarely history of rheumatic fever

SIGNS

Loud heart murmur
Pitting edema of the ankles
Enlarged neck veins
Shortness of breath
Increased pulse rate
Rales

PATIENT CARE

- a. If you suspect that the patient has rheumatic heart disease, refer him to a hospital for further evaluation.
- b. If the patient has signs of congestive heart failure, begin treatment as outlined in the Patient Care Guide for Congestive Heart Failure.

PREVENTION

Prevent rheumatic heart disease by preventing rheumatic fever. A child who has had an attack of rheumatic fever is very likely to get a second attack. You can reduce this risk by giving the child a 1200 mg intramuscular injection of benzathine penicillin once a month. You may substitute either 250 mg of penicillin V daily or 1 g of sulfadiazine daily. You should continue treatment until the patient is twenty years of age. You can also help prevent rheumatic heart disease by diagnosing and treating bacterial tonsillitis.

ANGINA PECTORIS

SYMPTOMS

Squeezing substernal pain with exertion or emotional stress
Sudden onset of pain, which lasts one to two minutes
Pain that radiates into shoulders, jaw, or along left arm
Repeated attacks of pain

SIGNS

No abnormal signs of heart disease

PATIENT CARE

- a. Tell the patient to stop whatever he is doing when he feels the chest pain beginning. Tell him to slip one 0.4 mg glyceryl trinitrate (nitroglycerin) pill under his tongue and let it dissolve there. Tell him to take a second pill if the pain continues for more than one to two minutes. Tell him to take no more than three pills during an attack. Tell him to carry the pills with him at all times.
- b. The patient can reduce the severity of attacks in several ways.
 Tell him to eat small meals more frequently.
 Tell him to rest after mealtime to allow his body to digest the food before he goes back to work.
 Tell the patient to stop smoking. Smoking causes the blood vessels to become smaller. This makes the problem worse.
 If the patient is overweight, tell him to lose weight. Extra body weight puts increased strain on the heart.
- c. Check the patient's blood pressure regularly, and test him for diabetes. Both high blood pressure and diabetes put extra strain on the heart. If the patient has either of these conditions, you must treat it.
- d. Refer the patient to a hospital. A doctor should confirm your diagnosis of angina pectoris.

MYOCARDIAL INFARCTION

SYMPTOMS

Severe substernal pain
 Feeling that pain is crushing the chest
 Associated shortness of breath
 Often, history of angina pectoris
 Pain that lasts minutes or hours and does not respond to glyceryl trinitrate or rest

SIGNS

Cyanosis, paleness
 Restlessness, fright, great pain
 Trouble breathing
 Possible signs of shock: cool, pale, damp skin;

weak, fast pulse; blood pressure less than 90/60

Weak, muffled, or irregular heartbeat

PATIENT CARE

- a. Relieve the patient's pain. This is most important. Give the patient 100 mg of pethidine IM. Repeat the medication after two to three hours if the patient continues to have pain. Alternatively, use 10 mg of morphine sulfate IM. Morphine is more powerful than pethidine.
- b. Transfer the patient to a hospital. Position him so that he is partially sitting, with his head and shoulders raised above the rest of his body. This position will help to prevent shortness of breath.
- c. If the patient has cold, clammy skin, rapid pulse, blood pressure below 90/60, or other signs of shock, keep him warm. However, do not give him intravenous fluids. The heart failure would become worse as a result of such treatment.

HYPERTENSION

SYMPTOMS

No symptoms until late in course of disease
 Very rarely comes with presenting complaint
 Possible history of headache, nosebleeds, or light-headedness
 Family history of hypertension, heart disease, or stroke
 Most frequently in adults over thirty years of age

SIGNS

High blood pressure

BLOOD PRESSURE		SEVERITY
Systolic	Diastolic	
140 to 160	90 to 104	Mild
160 to 180	105 to 125	Moderate
Over 180	Over 125	Severe

PATIENT CARE

- a. Tell the patient about his disease. Hypertension may require treatment for the rest of the patient's life. He must understand the dangers of the disease. He must also become convinced that treatment will prevent these

problems. Otherwise, he will not cooperate in caring for himself.

- b. If the patient is overweight, encourage him to reduce his weight. Explain to the patient that weight reduction often helps to bring high blood pressure down.
- c. Urge the patient to stop using salt during food preparation and at the table. Explain that salt reduction may help to bring the high blood pressure down.
- d. If the patient's blood pressure is in the severe range, refer him to a hospital immediately. Weight reduction and salt reduction alone will not be effective. The treatment for severe hypertension requires more powerful drugs.
- e. If the patient's high blood pressure is in the moderate range, start giving 25 mg of hydrochlorothiazide daily. If the pressure remains elevated after one month, increase the dosage to 50 mg daily. If the pressure is still in the moderate range after another month, refer the patient to a hospital.
- f. If the patient's blood pressure is in the mild range at first, see the patient weekly for three months. If his blood pressure remains high after three months, start the patient on 25 mg of hydrochlorothiazide daily. In-

crease the dosage if necessary.

- g. Whenever you use hydrochlorothiazide in patient care, encourage the patient to eat foods that have extra potassium. Hydrochlorothiazide washes potassium out of the body. Without enough potassium, the patient will become very weak, and the medication will stop working. Foods with high levels of potassium include peas, lentils, soybeans, beans, peanuts, green vegetables, bananas.
- h. Follow the patient with high blood pressure on a weekly basis for the first three months, and monthly thereafter. At each visit, weigh the patient and take his blood pressure. Ask the patient to relax for at least fifteen minutes before you record his pressure. Encourage him to eliminate salt from his diet. If he is overweight, help him to reduce his body weight.

PREVENTION

Most people with hypertension do not know that they have a problem. If hypertension is a problem in your community, plan a screening and follow-up program. Also, take the blood pressure of every adult patient who comes to the health center.

GASTROINTESTINAL

Diarrhea, Vomiting, or Mild Abdominal Pain

AMEBIASIS

SYMPTOMS

Mild to severe diarrhea
Blood and mucus in stool
Severe abdominal cramps and urge to move bowels
Slight fever

SIGNS

Mild tenderness in lower abdomen
Dehydration associated with severe diarrhea

PATIENT CARE

- Examine the patient for signs of dehydration. If he appears dry, treat him for dehydration immediately.
- If the patient has any tenderness over his liver, jaundice, or evidence of an acute abdomen, refer him to a hospital immediately.
- Instruct the patient to take 250 mg tablets of metronidazole three times a day for seven days. Use the following dosages:

Adults	500 mg (2 tablets) three times a day
Children	
15 kg or more	250 mg (1 tablet) three times a day
10 to 15 kg	187.5 mg (3/4 tablet) three times a day
6 to 10 kg	125 mg (1/2 tablet) three times a day
Under 6 kg	62.5 mg (1/4 tablet) three times a day

- Advise the patient to take the drug with his meals. Taking the drug with meals will reduce the irritation that the drug causes. Warn the patient not to drink any alcohol while he is taking the drug. Drinking alcohol while taking the drug can cause severe cramps, nausea, vomiting, and headaches.
- If the patient does not improve after a course of treatment, refer him to a hospital for further evaluation and treatment.

PREVENTION

- Teach families to wash their hands after going to the latrine and before cooking and eating.
- Urge families to dispose of stool in a latrine so that it cannot contaminate water or food.
- Tell them to wash raw vegetables and fruit carefully before eating them.
- Teach them to boil water before they drink it and to protect their water supply from contamination.

GIARDIASIS

SYMPTOMS

Discomfort in upper abdomen
Gas and abdominal cramps
Diarrhea, often mild, over many months
No fever
No blood or mucus in stool

SIGNS

Weight loss

PATIENT CARE

- Examine the patient for signs of dehydration. If he is dehydrated, treat him for this condition immediately.
- Instruct the patient to take metronidazole for seven days. Use the following dosages:
Adults and children
30 kg and over 250 mg three times a day
Children
15 to 30 kg 125 mg three times a day
Under 15 kg 125 mg twice a day
- When the patient is taking metronidazole, warn him to avoid drinking alcohol. Advise him to take the drug at meal times.
- Mepacrine is as effective as metronidazole. Use the following dosages:
Adults and children
30 kg and over 100 mg three times a day for seven days

Children	
15 to 30 kg	50 mg three times a day for seven days
Under 15 kg	50 mg twice a day for seven days

- e. If the patient has not improved after one month, or if the problem recurs, give him a second course of treatment.
- f. If the patient does not improve after a second course of treatment, refer him to a hospital for further evaluation.

PREVENTION

- a. Urge families to dispose of stool in latrines to prevent contamination of soil and water.
- b. Urge people to wash their hands after using the latrine and before cooking and eating.
- c. Urge people to wash all raw fruits and vegetables before eating them.

PEPTIC ULCER

SYMPTOMS

Gnawing, aching, or burning sensation in upper abdomen
 Frequently, history of ulcers
 Pain that often starts thirty to sixty minutes after meal
 Pain in early part of night
 Black, tar-like stools when ulcer bleeds

SIGNS

Mild tenderness on deep palpation below the sternum

PATIENT CARE

- a. Help the patient to deal with the problems in his life that are causing tension. Support him in his efforts to cope with these problems. Increased stress is the major factor in this illness.
- b. Help the patient to avoid foods that he knows will cause stomach irritation. These often include alcohol, spicy foods, coffee, tea, and cola drinks. Urge the patient to eat small meals of mild, nutritious foods rather than large, spicy meals.
- c. Warn the patient that aspirin will irritate his stomach. Oral cortisone also makes stomach ulcers worse.

- d. Tell the patient to take antacid tablets or liquid about one hour after each meal. Tell him to take additional tablets or liquid whenever he develops pain in his abdomen. Tell him to take enough liquid or tablets to relieve his discomfort. This may be three to four teaspoons of liquid or an equal number of tablets. Advise the patient that antacids can cause diarrhea or constipation. Magnesium products cause a laxative effect. Aluminum hydroxide may cause constipation.
- e. Refer the patient to a hospital immediately if he develops any complications. Complications include intestinal obstruction, signs of internal bleeding, or an acute abdomen.

PREVENTION

The best ways to prevent peptic ulcers are to reduce stress and to avoid spicy foods and acid drinks.

GASTROENTERITIS

Caused by Food Poisoning

SYMPTOMS

Vomiting and colicky pain
 Symptoms that start within one-half day of eating contaminated food
 Other people who ate same food also became ill
 Possibly some diarrhea

SIGNS

Dehydration with severe vomiting

PATIENT CARE

Treat the patient for dehydration. Give him small amounts of water, juice, or other liquid every fifteen minutes. If vomiting is severe, give him intravenous fluids. Follow the Patient Care Procedure for Starting an Intravenous Solution in a Peripheral Vein.

Caused by Viruses and Bacteria

SYMPTOMS

Severe, watery diarrhea
 Vomiting
 With severe bacterial infection; blood and mucus in the stool

101

GASTROINTESTINAL

Abdominal cramps

SIGNS

Dehydration with severe diarrhea
Tenderness on palpation of abdomen
No guarding or rebound tenderness
With severe bacterial infection, high fever
with blood and mucus in stool

PATIENT CARE

- a. Treat the patient for dehydration. Give him small amounts of water, juice, or other liquid every fifteen minutes. If vomiting is severe, give him intravenous fluids. Follow the Patient Care Procedure for Starting an Intravenous Solution in a Peripheral Vein.
- b. If the patient has blood and mucus in his stool, together with severe cramps, fever, and chills, give him a course of oral ampicillin. See Guide for Calculating Antibiotic Dosages.
Continue the drug only until the symptoms become less severe and the patient's temperature returns towards normal. Do not use ampicillin for more than five days.
- c. For severe vomiting, give adults 25 to 50 mg of chlorpromazine IM every four hours. Give children approximately 1 mg per kg body weight every four to six hours.
- d. If the patient does not improve after five days, refer him to a hospital for further evaluation and treatment.

ing meal on two successive days. Use the following dosages:

	ELIXIR (150 mg/ 1 ml)
Adults	30 ml
Children	
20 kg and over	20 ml
15 to 20 kg	15 ml
10 to 15 kg	10 ml
Under 10 kg	5 to 10 ml

Piperazine may also be effective when given as a single dose. If the symptoms return after one month, repeat the treatment.

- b. Warn the patient that this drug may cause some nausea, vomiting, and diarrhea. However, these side effects should not prevent him from completing the treatment.
- c. Tell the patient to take magnesium sulfate the following morning in order to eliminate the worms. Give an adult three teaspoons of crystals, and tell him to mix them in a glass of water. Give a child one to two teaspoons of crystals in half a glass of water. Warn the patient that the solution will taste very bitter.
- d. An alternative drug, pyrantel pamoate, is effective against both hookworm and roundworm. You may treat the patient with a single dose of pyrantel, 10 mg per kilogram of body weight for roundworm. Use double this dosage for a mixed infection of hookworm and roundworm.

Intestinal Worms

ROUNDWORMS

SYMPTOMS

Vomited or coughed up worm or passed worm in stool
Possible fever, coughing, or wheezing
Possible colicky pain in abdomen
History of worm problem

SIGNS

Respiratory symptoms of mild fever, cough, and wheezing
Often no signs of disease

PATIENT CARE

- a. Give the patient piperazine after his even-

	ROUND- WORM ALONE	ROUND- WORM PLUS HOOKWORM
Adults and children		
40 kg and over	10 ml (500 mg)	20 ml (1 g)
Children		
30 to 40 kg	7.5 ml (375 mg)	15 ml (750 mg)
12 to 30 kg	5 ml (250 mg)	10 ml (500 mg)
Under 12 kg	2.5 ml (125 mg)	5 ml (250 mg)

Pyrantel pamoate may be more effective if given daily for two to three days.

- e. Pyrantel pamoate causes nausea, headache, dizziness, and rashes.
- f. Bephenium hydroxynaphthoate kills both roundworms and hookworms. You may

give the patient a single dose. Use the following dosages:

Adults and children 20 kg and over	5 g
Children Under 20 kg	2.5 g

Tell the patient to take the drug before eating or drinking anything. He may eat one hour after taking the drug.

PREVENTION

Teach the patient and his family to prevent roundworm infection by using a latrine. Teach them to protect drinking water from contamination, and to boil all water before drinking it. Teach them to wash their hands after using the latrine and before eating.

PINWORMS

SYMPTOMS

Restlessness at night
Scratches around the anus
Itching and discharge from the vagina
Tiny worms around anus at night

SIGNS

Scratch marks around the anus

PATIENT CARE

- Treat pinworms with a single dose of pyrantel pamoate, unless the patient is a pregnant woman or a child less than two years old. Use the following dosages:

Adults and children 40 kg and over	10 ml (500 mg)
Children 30 to 40 kg	7.5 ml (375 mg)
12 to 30 kg	5 ml (250 mg)
Under 12 kg	2.5 ml (125 mg)

- Piperazine is effective in the treatment of pinworms. However, the patient must take the drug twice daily for seven days. Use the following dosages:

Adults and children 30 kg and over	7 ml (1 g) twice a day
Children 20 to 30 kg	5 ml (750 mg) twice a day
10 to 20 kg	2.5 ml (375 mg) twice a day

- Warn the patient that the drug may cause

some nausea. However, this side effect should not prevent him from taking the full dosage.

- Treat all members of the family at the same time. Unless you treat all members, the infection will occur again within the family.
- If the patient has severe itching around his anus, teach the parent how to put petrolatum ointment (Vaseline) around the edges of the anus. This will help to prevent itching when the female worm crawls around the edge of the anus.
- Teach the mother to cut the children's fingernails very short. Eggs collect under the fingernails and re infect the patient and his family. Teach her how important clean fingernails are in preventing pinworm infections.

PREVENTION

- Always treat the entire family. Otherwise, one or two family members will re infect the other members of the family.
- At the time of treatment, tell the family to wash bed sheets and clothing carefully to remove the pinworm eggs. Tell them to wash the bedsheets and clothing in boiling water, and dry them in the sun.
- Tell family members to keep their fingernails short and clean.
- Encourage family members to wash their hands carefully after using the latrine and before eating. Good hygiene is most important in preventing pinworm infection.

TAPEWORMS

SYMPTOMS

Worm segments in stool
Patient eats undercooked beef, pork, or fish

SIGNS

With heavy infection in children, weight loss and malnutrition
Otherwise, no findings except worm segments in stool

PATIENT CARE

- Give the patient niclosamide. Tell him to eat no food on the evening before treatment.

GASTROINTESTINAL

Early on the following morning, give him the tablets. Tell him to chew them thoroughly and swallow them with some water. Use the following dosages:

Adults	2 g
Children	
26 kg and over	1.5 g
12 to 26 kg	1.0 g
12 kg and under	0.5 g

- b. Niclosamide may cause some nausea and abdominal pain. Warn your patient of these side effects.
- c. Two hours after he has taken niclosamide, give the patient a strong purge. Use magnesium sulfate. For an adult, dissolve three teaspoons in at least eight ounces of cool water. For a child, use one to two teaspoons.
- d. Tell the patient that he may eat two hours after taking the niclosamide.

PREVENTION

The patient can prevent tapeworm infections by cooking all beef, pork, and fish thoroughly before eating it.

HOOKWORMS

SYMPTOMS

Itchy rash on hands or feet
Small blisters called ground itch on hands or feet
Dry cough and wheezing
History of hookworm infection in the community

SIGNS

Pale mucous membranes and conjunctivae
 because of severe anemia

PATIENT CARE

- a. If the patient has any signs of anemia, give him ferrous sulfate for three months. Use the following dosages:

Adults and children			
over 12 years of age	Tablets	300 mg	three times a day
Children			
6 to 12 years of age	Tablets	300 mg	twice a day

1 to 6 years of age	Oral suspension	5 ml three times a day
under 1 year of age	Oral suspension	2 ml three times a day

Tell the family to give the patient the drug at mealtime. The iron is less likely to cause stomach irritation when the stomach has food in it.

- b. If the patient may also have roundworm infection, treat him with a drug that kills both hookworms and roundworms. A 250 mg/5 ml oral suspension of pyrantel pamoate is effective against both kinds of worms. Use the following dosages:

Adults and children		
40 kg and over	20 ml	(1 g)
Children		
30 kg to 40 kg	15 ml	(750 mg)
15 to 30 kg	10 ml	(500 mg)
Under 15 kg	5 ml	(250 mg)

- c. Bephenium hydroxynaphthoate kills both roundworms and hookworms. You may give the patient a single dose. Use the following dosages:

Adults and children		
20 kg and over	5 g	
Children under 20 kg	2.5 g	

Tell the patient to take the medicine before eating or drinking anything. He may eat one hour after taking the medicine.

- d. If the patient may also have roundworms, but you cannot give him a drug that kills both hookworms and roundworms, treat the roundworms first with piperazine. See Patient Care Guide for Roundworms.
- e. Tetrachlorethylene (TCE) is effective against hookworms. Tell the patient to eat only a light meal the night before you treat him with TCE. Tell him not to drink alcohol for at least twenty-four hours before or after treatment. Use the following dosages:

Adults and children		
40 kg and over	5.0 ml	
Children		
36 to 40 kg	4.5 ml	
31 to 36 kg	4.0 ml	
26 to 31 kg	3.5 ml	
20 to 26 kg	3.0 ml	
13 to 20 kg	2.0 ml	
5 to 13 kg	1.0 ml	

- f. TCE causes nausea, vomiting, dizziness, and a feeling of being drunk. Warn the patient to expect these feelings. Keep him lying down for at least four hours after he takes the drug.

If the patient is severely anemic, treat the anemia for at least two weeks before you give the patient TCE.

PREVENTION

Teach families that they can prevent hookworm by using a latrine. The hookworms enter the body through the skin of the feet. So wearing shoes will also help to prevent hookworm infection from any human stool on the ground.

Liver Diseases

VIRAL HEPATITIS

SYMPTOMS

- Loss of appetite, nausea, and vomiting
- Yellow skin or eyes
- Pain in right upper abdomen
- Dark urine

SIGNS

- Jaundice
- Smooth and tender liver edge

PATIENT CARE

- a. Strongly encourage the patient to rest in bed until the signs and symptoms of hepatitis are gone. Tell him to rest until he is free of jaundice and fever, and the tenderness over his liver is gone. Tell the patient to rest in bed until he is feeling hungry and eating well. If signs and symptoms return, tell the patient to start resting in bed again.
- b. If the patient is vomiting severely, and he is unable to hold down fluids, start an intravenous infusion. Give him up to 2500 ml of 5% dextrose in 1/2 normal saline daily. This will prevent dehydration.
- c. Help the patient to eat a nutritious diet. Tell him to avoid greasy or fatty foods until his recovery is complete.
- d. Warn the patient that alcohol will damage his liver while he is recovering from hepati-

tis. Tell him to avoid alcohol for at least two months after he has recovered.

- e. Refer the patient to a hospital if he becomes extremely ill, unconscious, or very jaundiced.

PREVENTION

The hepatitis virus spreads easily through water. Boil or chlorinate all drinking water to destroy the hepatitis virus. The virus also spreads through saliva. Tell the patient to use only his own eating utensils. Teach the family to dispose of the patient's stool so that it cannot contaminate the garden or the water supply.

CIRRHOSIS

SYMPTOMS

- Yellow skin or eyes
- Swollen abdomen
- Weakness
- Poor appetite, with nausea and vomiting
- Long history of drinking alcohol heavily and eating a very poor diet

SIGNS

- Looks chronically ill
- Muscle wasting
- Jaundice
- Enlarged abdomen, with fluid
- Enlarged liver, firm, but not tender

PATIENT CARE

- a. If the patient drinks alcohol, the cirrhosis will rapidly worsen. When the patient is an alcoholic, you must treat that condition successfully in order to prolong his life.
- b. Patients with cirrhosis often have very poor appetites, especially when they consume alcohol. Help the patient to eat a nutritious diet.
- c. If possible, give the patient one capsule a day of Vitamin B complex.

PREVENTION

Many patients with cirrhosis are chronic alcoholics. Prevention of cirrhosis in these cases depends largely upon the prevention and treatment of alcoholism.

Acute Abdomen

ACUTE ABDOMEN

SYMPTOMS

Severe abdominal pain
History of recent trauma to abdomen that may indicate internal bleeding

SIGNS

Patient looks very ill
Possible fever and signs of shock
Swelling of the abdomen
Abdominal tenderness with guarding
Rebound tenderness
Abnormal percussion note, especially high-pitched sound
Increased, decreased, or absent bowel sounds

PATIENT CARE

- a. A patient with signs of an abdominal emergency quickly develops shock. Start an intravenous infusion and give the patient normal saline solution or Ringer's lactate solution. Begin the IV before you transfer the patient to a hospital. Keep the infusion running during the transfer.
- b. Do not give the patient anything by mouth. Giving him anything by mouth will often complicate the problem. The intravenous infusion will help to prevent dehydration. Never give a patient with acute abdomen a laxative, even if he complains of constipation. A laxative makes the bowels more active. The increased activity may cause a perforation or other complication.
- c. Arrange for transportation to transfer the patient to a hospital as quickly as possible.
- d. If you suspect an infection, give the patient intramuscular antibiotics while you are waiting for his transfer to the hospital. Give him 1200 mg of benzylpenicillin G IM. Be sure he is not allergic to penicillin. Also give him 500 mg of streptomycin IM.
- e. If the patient is in severe pain, and he will not reach a hospital within four hours, give him pethidine to relieve the pain. However, these drugs will make diagnosis of the patient's problem more difficult when he reaches a hospital. Give adults 100 mg of

pethidine IM. Give children 1 mg per kg of body weight.

ACUTE APPENDICITIS

SYMPTOMS

Severe abdominal pain
History of colicky pain around the naval
Pain that worsens and moves to the right lower quarter of abdomen

SIGNS

In early stages, mild fever only, up to 38° C to 38.5° C
Rebound tenderness

PATIENT CARE

- a. When you suspect that the patient has acute appendicitis, start an intravenous infusion. Give him normal saline solution or Ringer's lactate. This will help to prevent dehydration and shock.
- b. Transfer the patient to a hospital as quickly as possible. Keep him in the shock position, with his feet slightly elevated. Keep the patient warm. Keep the IV running.
- c. If you suspect a ruptured appendix, give the patient antibiotics while waiting for his transfer. If he is not allergic to penicillin, give him 1200 mg of benzylpenicillin G IM. Also give him 500 mg of streptomycin IM.
- d. Give a pain medication only when the hospital is more than four hours away. Give adults 100 mg of pethidine IM. Give children 1 mg per kg of body weight.

INTESTINAL BLOCK

SYMPTOMS

Severe crampy abdominal pain that comes in spasms
Vomiting
Constipation or complete absence of stools

SIGNS

Patient looks very ill
Shock and dehydration
Possible surgical scars on abdomen

High-pitched percussion note
 Increased or absent bowel sounds
 Guarding or rebound tenderness
 Possible hernia in the groin
 Green-brown vomit that smells like stool

PATIENT CARE

- a. Start an intravenous infusion. Use normal saline solution or Ringer's lactate. Keep the IV running during transfer of the patient to a hospital.
- b. Keep the patient in the shock position. Place his feet slightly higher than his abdomen. Keep him warm. If he shows signs of dehydration, treat him for this condition. See Patient Care Procedure for Starting an Intravenous Solution in a Peripheral Vein.
- c. Transfer the patient to a hospital as quickly as possible. He will require careful observation and, probably, surgery.
- d. Pass a nasogastric tube into the patient's stomach and remove as much fluid as possible. Leave the tube in place. Empty the stomach every fifteen minutes. This will help to prevent vomiting and make the patient more comfortable. See Patient Care Procedure for Passing a Nasogastric Tube.
- e. If the patient has guarding or rebound tenderness, he may have an infection within the abdominal cavity. Give the patient antibiotics intramuscularly. Give him 1200 mg of benzylpenicillin G IM and 500 mg of streptomycin IM.
- f. If the patient is having severe pain, give him 100 mg of pethidine IM. If the patient is a child, give him 1 mg per kg of body weight. You may repeat this dosage in four hours.

Anal Problems

HEMORRHOIDS

SYMPTOMS

Pain in the anus
 Pain that worsens when passing stool
 Possible bright red blood on stool
 History of constipation
 Pregnancy

SIGNS

Large, bluish blood vessels under skin around anus
 Possible hard clot of blood inside vessel

PATIENT CARE

- a. If the patient has a hard clot of blood under the skin near his anus, removal of the clot with a small incision will quickly relieve the pain. Refer the patient to a hospital for this procedure.
- b. Advise the patient to soak the hemorrhoids in warm water for thirty minutes at least three times a day. Tell him to sit in a small tub of warm water.
- c. If constipation is associated with the hemorrhoids, urge the patient to drink an extra one to two liters of water a day. Tell him that he should move his bowels at least once a day. Tell him to take 15 to 30 ml of mineral oil once a day, to soften his bowel movement. Tell the patient to stop taking mineral oil after the bowel movements have become soft and the hemorrhoids have improved.
- d. Tell the patient to insert a lignocaine and hydrocortisone suppository into his rectum two to three times a day, after bowel movements. Rectal suppositories will help to relieve discomfort.
- e. If the hemorrhoids continue to bother the patient, refer him to a hospital for further care. Sometimes the hemorrhoids can be removed surgically.

ANAL FISSURES

SYMPTOMS

Severe pain when passing stool
 History of severe constipation

SIGNS

Deep crack in membrane at margin of anus

PATIENT CARE

- a. Tell the patient to sit in a tub of warm water for thirty minutes, three times a day. Warm soaks will soothe and heal the fissure.
- b. The stool must be soft or the patient will have severe pain when he moves his bowels.

107

GASTROINTESTINAL

- Tell the patient to take 15 to 30 ml of mineral oil daily. Tell him to drink extra water so that his stools will become soft. Warn the patient not to continue taking mineral oil after the fissure has healed.
- c. Tell the patient to use a lignocaine and hydrocortisone rectal suppository after bowel movements. This suppository will provide some relief.
- d. If the fissure continues to bleed or remain painful, refer the patient to a hospital. A doctor may have to remove the fissure.

GENITOURINARY

Urinary Tract Infections and Stones

URINARY TRACT INFECTION

SYMPTOMS

Women affected more often than men
 Burning pain while passing urine
 Must pass urine more often than normal
 History of urinary tract infection
 Cloudy urine
 In children, crying when passing urine
 In children, history of bedwetting, dripping urine, wetting pants, fever, or vomiting
 High fever and chills
 One-sided backache

SIGNS

Tenderness on palpation over bladder
 In men, possible enlarged prostate gland
 Tenderness on palpation or percussion over kidney
 Blood and pus in urine

PATIENT CARE

- Encourage the patient to increase the flow of urine by drinking an extra glass of fluid every one to two hours.
- Treat the patient either with a 500 mg/5 ml mixture of sulfadimidine, or with 500 mg sulfadimidine tablets, or with 500 mg sulfadiazine tablets. Give him a large initial dose. Then tell him to take the medication every six hours for ten days. Use the following dosages:

500 mg/5 ml mixture of sulfadimidine

	INITIAL DOSE	THEN EVERY SIX HOURS FOR TEN DAYS
Adults and children 40 kg and over	30 ml	10 ml
Children 30 to 40 kg	20 ml	10 ml
20 to 30 kg	15 ml	7.5 ml
10 to 20 kg	10 ml	5 ml
Under 10 kg	5 ml	2.5 ml

500 mg sulfadimidine or sulfadiazine tablets

	INITIAL DOSE	THEN EVERY SIX HOURS FOR TEN DAYS
Adults and children 40 kg and over	3 g (6 tablets)	1 g (2 tablets)
Children 30 to 40 kg	2 g (4 tablets)	1 g (2 tablets)
20 to 30 kg	1.5 g (3 tablets)	750 mg (1-1/2 tablets)
10 to 20 kg	1 g (2 tablets)	500 mg (1 tablet)
Under 10 kg	500 mg (1 tablet)	250 mg (1/2 tablet)

- Tell the patient to return to see you immediately if he develops a rash, itching, or pain in his joints. If these reactions occur, tell him to stop taking sulfadimidine or sulfadiazine. Start giving him tetracycline. See Guide for Calculating Antibiotic Dosages.
- If the signs and symptoms of urinary tract infection continue for as long as one week after you start treating the patient, refer him to a hospital.
- If the patient has tenderness over the kidneys, or blood and pus in the urine, refer him to a hospital. These are the signs and symptoms of upper urinary tract infection.

PREVENTION

Good personal hygiene may reduce the risk of urinary tract infection. Teach women and girls to clean themselves carefully after going to the toilet. Teach them to wash from front to back so that bacteria from the stool do not get into the urethra.

STONES IN THE URINARY TRACT

SYMPTOMS

Sudden onset of severe colicky pain in the

loin

- Pain that radiates across the flank to the lower abdomen or groin
- Pain in the penis or vagina
- Possible blood in the urine
- Possible nausea, vomiting, and abdominal swelling

SIGNS

- Possible shock because of severity of pain
- Tenderness in flank or loin

PATIENT CARE

- a. Urge the patient to drink a very large volume of water every day. Three to four liters of fluid daily over a period of months may help to flush out the stones. Tell the patient to drink water before going to bed and once more during the night.
- b. Give the patient 100 mg of pethidine IM every four hours for pain. Relieving pain will reduce muscle spasms caused by the stone. If you relieve the patient's muscle spasms, the stone can move through the urinary tract.
- c. Refer the patient to a hospital if severe pain continues after you have given him pethidine. If the pethidine relieves the pain, observe the patient for forty-eight hours. The stone may pass down the urinary tract when the patient drinks a lot of fluid. If the pain stops, the stone has moved to another part of the urinary tract or out through the urethra.
- d. Some urinary tract stones require surgical removal.

Kidney Problems

NEPHRITIS

SYMPTOMS

- Passing red or brown urine
- Possibly passing less urine than usual
- Swelling of the eyelids in the morning
- Possible recent history of bacterial infection
- Possible recent history of snake bite, drug reaction, or chemical poisoning

SIGNS

- Blood and protein in the urine
- Puffiness of the eyelids
- Increased blood pressure

PATIENT CARE

Refer patients with suspected nephritis to a hospital.

NEPHROTIC SYNDROME

SYMPTOMS

- Patient most commonly a child younger than three
- Swollen eyes in the morning
- Swelling of arms, legs, and face
- Possible recent history of upper respiratory infection

SIGNS

- Pitting edema of the legs and arms
- Swelling around the eyes
- Pleural effusion
- Ascites, fluid in the abdomen
- Protein in the urine

PATIENT CARE

- a. If the patient appears to have a nephrotic syndrome, refer him to a hospital.
- b. While he is under treatment, you must encourage the patient to eat body-building foods. The patient with nephrotic syndrome loses large amounts of protein in his urine. His body must replace the protein by building new proteins from the food that he eats.
- c. Encourage the family to prepare foods for the patient without adding any salt. Explain to the family that salt holds water in the body. It will make the swelling worse.
- d. Look for signs of infection. Pneumonia occurs frequently in patients with nephrotic syndrome. If evidence of infection appears, treat the patient with penicillin or erythromycin. Follow the Patient Care Guide for Pneumonia.

Problems of the Prostate and Scrotum

ENLARGED PROSTATE GLAND

SYMPTOMS

Dribbling and wetting at end of urination
 Gets up at night to pass urine
 Urine stream that becomes weak and small
 Later, constant feeling that bladder is full
 Finally, inability to pass urine
 Possible development of urinary tract infection

SIGNS

Firm, enlarged prostate gland
 Weak urinary stream
 Possible enlarged kidneys
 Later, enlarged bladder

PATIENT CARE

- a. When the signs and symptoms of enlarged prostate first develop, explain the problem to the patient. Tell him to return to see you every six to twelve months so that you can check the progress of the condition.
- b. If the patient develops a urinary tract infection, refer him to a hospital.
- c. When the patient develops problems of wetting himself and straining to start the urine stream, refer him to a hospital.
- d. If the patient has an enlarged bladder and is unable to pass his urine, you must catheterize him. See Patient Care Procedure for Catheterizing the Bladder of a Male. Never remove more than 1000 cc of urine at one time. When the bladder has been very dilated, removing more than 1000 cc of urine at one time can cause shock. After decompressing the patient's bladder, transfer him to a hospital.

PROSTATITIS

SYMPTOMS

Pain at the base of the penis
 Burning on urination
 Increased frequency of urination
 Possible gonorrhea or urinary tract infection

SIGNS

Very tender, enlarged prostate gland that is soft on palpation
 Discharge from penis on palpation of prostate gland

PATIENT CARE

Acute Infection

- a. Encourage the patient to remain in bed. Give him aspirin every four hours. Advise him to drink an extra amount of fluid.
- b. Give the patient a course of tetracycline. Tell him to take 500 mg every six hours for two weeks.

Chronic Infection

- a. Give the patient a course of tetracycline. However, antibiotic treatment may not be effective because the drug does not reach the bacteria within the gland.
- b. Massage the prostate gland firmly and vigorously each week. This will help to force pus out of small pockets within the gland.

SCROTAL SWELLING

SYMPTOMS

Swelling of scrotum
 Swelling that comes and goes or gradually becomes worse
 Possible pain

SIGNS

Enlarged scrotum

PATIENT CARE

Refer men with pain or swelling of the scrotum to a hospital.

Problems Spread by Sexual Contact

GONORRHEA

SYMPTOMS

History of sexual intercourse within last two weeks
 In man
 Burning on urination

GENITOURINARY

White discharge from penis, later becoming thick and yellow

In woman

Often no symptoms
Vaginal discharge
Irritation in the vulva
Pain during intercourse

SIGNS

In man

Discharge from penis

In woman

Inflamed cervix

PATIENT CARE

- a. If the patient is not allergic to penicillin, give him 2.4 g of procaine penicillin GIM in each buttock, a total of 4.8 g. At the same time, give him 1 g of oral probenecid to prolong the effect of the penicillin. Use the same dosage for both men and women.
- b. If the patient is allergic to penicillin, treat him with 500 mg of oral tetracycline every six hours for ten days.
- c. Urge the patient to avoid sexual intercourse until he has completed treatment. Ask the patient to bring his sexual partners for treatment. Treat partners even if they have no symptoms. Gonorrhea often causes no symptoms in females.
- d. Refer patients to a hospital if they develop signs or symptoms of complications.

PREVENTION

- a. Always treat the partners of anyone who has gonorrhea. Otherwise, the problem will recur. Subsequent infections are more difficult to cure.
- b. Advise the patient always to use a condom during intercourse with a person who may be infected. When using a condom, the male should withdraw promptly after having an

ejaculation and wash himself carefully around the genitals.

SYPHILIS

SYMPTOMS

Small, painless sore on penis, external genitals, vagina, breast, or lip
Painless, enlarged lymph glands in groin
History of sexual contact

SIGNS

Chancres, painless sores with edges rolled in
Enlarged lymph glands in groin, which become firm and painless
Several weeks to months later, development of generalized rash
Lesions that may be flat, raised, or papular
Rash that often occurs on palms of hands and soles of feet

PATIENT CARE

- a. Give the patient 1800 mg of benzathine penicillin IM.
- b. Locate and treat the patient's sexual partners. After the initial stage, patients have no symptoms until many years later. Treatment then is of little value.
- c. If you suspect that the patient has advanced syphilis, refer him to a hospital.

PREVENTION

After the early symptoms and signs of syphilis have disappeared, the disease progresses inside the body for many years. Only a blood test will detect its presence during this period of time. Tell community members about the importance of treating all sexual partners, whether they have symptoms or not.

SKIN

Skin Problems Spread by Personal Contact

IMPETIGO

SYMPTOMS

Patient usually a child
Sores on face, arms, or legs
Itching of the sores
History of sores getting worse and spreading
Possible fever
History of sores in other family members

SIGNS

Small vesicles or pustules with crusts on them
Tender or painful lesions
Possible fever

PATIENT CARE

- a. Teach the family how to soak the skin lesions. See Patient Care Procedure for Using Soaks To Treat Skin Lesions. The soaks will help to dry up the skin lesions. Tell the family to continue this treatment until the crusts are gone and the skin is dry and clean.
- b. If the patient has a fever or a large number of skin lesions, give the patient an antibiotic. If he is not allergic to penicillin, give him penicillin V tablets or ampicillin. If the patient is allergic to penicillin, give him erythromycin tablets. Continue treatment for five to seven days, until the lesions have cleared up. See Guide for Calculating Antibiotic Dosages.
- c. Teach the family to use soap and water daily to wash the skin. Teach them to keep their fingernails short and clean. Warn them that scratching spreads the infection rapidly.

SCABIES

SYMPTOMS

Severe itching, usually between fingers and on wrists
Itching also around waist, armpits, buttocks, and genitals

Itching that becomes worse at night
History of other family members with same complaints

SIGNS

Lesions between fingers, on wrists, buttocks, genitals, and in armpits
Tiny burrows hidden by crusts and pustules of impetigo
Scratch marks

PATIENT CARE

- a. Scabies spreads very easily from one person to another. If one family member has scabies, treat everyone in the family.
- b. If the patient has impetigo from scratching the skin, treat this problem with warm soaks until crusts are gone.
- c. 25% benzyl benzoate lotion and 1% gamma benzene hexachloride cream and shampoo are all effective drugs in the treatment of scabies. Give the family 75 ml to 100 ml of cream, lotion, or shampoo for each family member.
- d. Tell the family to begin treating scabies by having each family member take a bath with soap and warm water. Tell them to scrub the skin with a stiff brush. This scrubbing will open up the burrows where the insects hide.
- e. Tell them to apply the drug to all areas of the skin below the neck. Warn them not to get any of the drug in the eyes. Tell them not to wash for twenty-four hours after applying the drug. Washing will remove the drug before it has a chance to kill the scabies insects.
- f. Tell them to apply the drug to all areas of the body again after twenty-four hours. Tell them to leave the drug on the skin for another twenty-four hours. Tell them to wash the body with soap and water after this forty-eight hour treatment.
- g. Tell the family to carefully wash all clothing and bedding, and put in the sun to dry. This procedure will destroy the scabies insects that may be in the clothing or bedding.

LICE**SYMPTOMS**

Itching of scalp, trunk, or pubic area
History of other members of the family
having similar complaints

SIGNS

White specks, eggs of lice, called nits, at the
roots of the hairs
Visible lice measuring 1 mm to 4 mm
Scratch marks and secondary bacterial
infection

PATIENT CARE

- a. When one family member has lice, you must treat everyone in the family. Lice are very contagious.
- b. Treat only the areas of the skin that are infested.
- c. Apply 25% benzyl benzoate lotion or 1% gamma benzene hexachloride cream or shampoo to the affected areas of the body. Leave the drug on for twenty-four hours. When using shampoo, apply it to the affected area and lather it in thoroughly for five minutes. Then wash it out, dry the hair, and comb the hair carefully to remove the nits.
- d. Repeat the treatment with benzyl benzoate after one week. Repeat the treatment with gamma benzene hexachloride two or three times at four day intervals, if necessary.
- e. The lice live in the seams of clothing. Tell the family to wash all clothing thoroughly and then iron the clothing. The ironing will kill the lice and the nits. If ironing is not possible, tell the family to apply 10% DDT powder to the clothing.
- f. Tell the family to expose all bedding to sunlight.
- g. If the patient has impetigo in addition to the lice, treat the impetigo with warm soaks four times a day.

RINGWORM**SYMPTOMS**

Small, flat, circular, itchy patches on skin
Patches on skin that gradually become larger

SIGNS

On scalp
Round, gray, bald patches
On exposed skin
Red, round lesions made up of very small vesicles, with central clearing and scaly edges
Wet, itchy, red lesions in groin and armpits, and on breasts

PATIENT CARE

- a. Encourage the patient to keep his skin clean and dry. The ringworm fungus grows easily in moisture. Dust talcum powder onto the skin to help keep it dry.
- b. Give the patient Whitfield's ointment to apply to the skin lesions twice a day for six weeks. Teach him to rub the ointment thoroughly into the skin each time he applies it.
- c. If the skin lesions are wet and red, show the patient how to use wet soaks on the lesions. Use cool wet soaks rather than warm soaks. Cool wet soaks will soothe and dry the skin lesions. Then the patient can apply the ointment.
- d. Lesions that do not clear up after six weeks and lesions that involve the nails, will respond to griseofulvin. The drug is effective but expensive. You must treat the patient with griseofulvin for at least three weeks. Use the following dosages:

Adults	500 mg once a day
Children	
6 to 12 years of age	250 mg once a day
Under 6 years of age	125 mg once a day

TINEA VERSICOLOR**SYMPTOMS**

Light colored patches of skin, mostly on
arms, chest, and back
Skin patches that may itch
Condition that becomes worse at one time of
year than another

SIGNS

Many small, round, scaly macules
Lesions that are lighter than surrounding
skin, or are brown or red

PATIENT CARE

- a. Show the patient how to apply 2.5% selenium sulfide lotion to the skin. Rub it vigorously into the skin and leave it for fifteen minutes. Then wash it off. Tell the patient to reapply the lotion once a day for four days, and then twice a week for two months.
- b. If the condition returns, repeat the treatment.

Skin Problems Not Usually Spread by Personal Contact

CELLULITIS

SYMPTOMS

History of a cut or injury
Swollen and painful area of skin

SIGNS

Fever and chills
Swollen, red, warm, and tender area of skin
Nearby lymph glands usually swollen and tender
No fluctuance

PATIENT CARE

- a. Tell the patient to apply warm soaks to the infected area of the skin. Soak the area with warm water for at least twenty minutes. Repeat the soaks four times a day until the lesion has cleared up.
- b. Give the patient an antibiotic. If he is not allergic to penicillin, give him oral penicillin V. If the patient is allergic to penicillin, give him oral erythromycin. See Guide for Calculating Antibiotic Dosages.
- c. Give the patient 600 mg of aspirin every four hours to relieve pain and discomfort.
- d. See the patient each day. If the patient shows no signs of improvement after forty-eight hours, refer him to a hospital.

BOILS AND ABSCESSES

SYMPTOMS

Small, red, painful lump that rapidly became bigger

SIGNS

Boils

Lesion raised above the skin
Red, warm skin surrounding lesion
Soft area in center of swelling
Nearby lymph glands swollen and tender
Yellow point in middle of boil, indicating pus

Abscesses

Larger than boils, but with the same signs

PATIENT CARE

- a. Abscesses may be a sign of diabetes. Use indicator paper to test the patient's urine for sugar. Follow the instructions that come with the indicator paper.
- b. Teach the patient how to apply warm soaks to the skin lesions. He must continue this treatment for at least twenty minutes four times a day until the center of the lesion becomes soft. Sometimes the abscess will burst by itself. If it does not, you must incise it. Follow the Patient Care Procedure for Opening and Draining Boils and Abscesses.
- c. Tell the patient to continue to treat the lesion with warm soaks until the incision stops draining. Tell him to keep the wound protected from dirt with a dry dressing between soaks.
- d. Give the patient oral penicillin V only if the boil is on the face or if the patient has a fever. If the patient is allergic to penicillin, give him oral erythromycin. See Guide for Calculating Antibiotic Dosages.

TROPICAL ULCER

SYMPTOMS

History of minor injury to foot or lower leg
Injury that developed into vesicle that quickly became ulcer
Ulcer that has a bad smell

SIGNS

Ulcer that has raised edges
Swollen, discolored skin surrounding ulcer
Patient poorly nourished child or young adult

115

PATIENT CARE

- a. Insist that the patient get complete rest. Tell him to keep the affected limb slightly raised above the level of his body while he is lying down. Keeping the affected limb raised will help to prevent swelling.
- b. Tell the patient to apply warm, salt water soaks to the skin ulcer. Tell him to add one teaspoon of salt to one liter of boiled water. Tell him to soak the ulcer for thirty minutes four times a day.
- c. Tell him that after he has soaked the ulcer, he should swab it with a 3% solution of hydrogen peroxide. This will help to clean the ulcer and promote healing.
- d. Tell the patient to cover the ulcer with a piece of clean gauze between soaks.
- e. Give the patient 500 mg of streptomycin IM twice a day for ten days. Also give the patient 600 mg of procaine penicillin G IM daily for ten days. Do not give penicillin if the patient is allergic to it. Substitute erythromycin. See Guide for Calculating Antibiotic Dosages.
- f. When the surface of the ulcer is clean and new skin begins to grow in from the edges, cover the ulcer with petrolatum ointment and clean gauze. Then wrap the affected limb with an elastic bandage. Keep the bandage in place for up to ten days at a time unless the ulcer begins to drain again. Tell the patient to remain off of his feet until the ulcer is completely healed. Tell the patient that if he begins to walk too soon, the ulcer will not heal.
- g. If the ulcer has not healed after five weeks, refer the patient to a hospital. Tropical ulcers are very difficult to cure. Early, vigorous treatment is very important.
- h. Encourage the patient to eat more body building and protective foods. Patients who are poorly nourished are much more likely to suffer from tropical ulcer than are well-nourished individuals.

PREVENTION

Treat any small cut or injury on the lower legs immediately. Tell the patient to wash any injury with soap and water and to cover the injury.

HERPES SIMPLEX**SYMPTOMS**

One or more small, painful sores near mouth or nose or on genitals
 Probable history of recent fever, injury, or digestive problem
 History of similar sores

SIGNS

Group of small vesicles
 Red skin surrounding vesicles
 Crusts on vesicles
 Possible swelling and tenderness of nearby lymph glands

PATIENT CARE

- a. No treatment is available that will increase the rate of healing of herpes skin lesions.
- b. If you see pus and crusting from a bacterial infection, tell the patient to apply warm soaks to the skin lesion three or four times a day. These soaks will help to clear up the bacterial infection more rapidly.

Skin Problems Never Spread by Personal Contact**ECZEMA****SYMPTOMS**

Infant and young child
 Red, wet skin lesions, often on cheeks or forehead
 Older child and adult
 Dry, itchy areas, most often in front of elbows, behind knees

SIGNS

Infant and young child
 Small vesicles and crusts
 Weepy, wet lesions
 Scratch marks, crusts, secondary bacterial infection
 Older child and adult
 Thickened, dry skin with scratch marks
 Oozing, if infection is present

PATIENT CARE

- a. If the skin lesions are wet and red, teach the patient to apply cold soaks to the skin for thirty minutes four times a day until the skin has become dry.
- b. Apply a 1% hydrocortisone ointment to the skin lesions twice daily. Use only a small amount of ointment, and rub it thoroughly into the skin. Treat only small areas of skin with this ointment. Apply the ointment only if the skin is no longer wet or weepy.
- c. Encourage the patient to avoid the use of soap. Tell him to wash once a day only, and only with water. Water will rapidly dry out the skin.
- d. Teach the patient to apply petrolatum ointment to the moist skin after bathing, to trap water in the skin.
- e. Scratching makes the skin lesions worse. When the patient is a young child, show the mother how to cut the child's fingernails and keep them clean and short. Give the child an oral antihistamine drug such as 2 mg of chlorpheniramine at bedtime to help reduce the itching.

- b. In other patients, begin giving betamethasone. Give the patient 0.6 mg three times a day for one week, followed by 0.6 mg daily for two additional weeks.
- c. Twenty-four hours after starting the betamethasone tablets, start treatment with diethylcarbamazine. Begin treatment with one third of the full dosage. Increase the daily dosage gradually over four to six days. Continue treatment for three weeks. If the patient has severe allergic reactions, increase the drug dosage more slowly.

WEIGHT OF PATIENT	INITIAL DOSE	FULL DOSE
40 kg and over	100 mg daily	100 mg three times a day
20 to 40 kg	50 mg daily	50 mg three times a day
10 to 20 kg	25 mg daily	25 mg three times a day
5 to 10 kg	12.5 mg daily	12.5 mg three times a day

- d. You may use an antihistamine to control some of the allergic symptoms. Use chlorpheniramine either orally or IM depending on the severity of the allergic symptoms. Follow the dosage guidelines in the Formulary. Begin antihistamine treatment before you give the first dose of diethylcarbamazine.

ONCHOCERCIASIS

SYMPTOMS

Severe, red, itching rash over one quarter of body or across the back for several months
 Difficulty with vision
 Lumps under skin
 Onchocerciasis present in the community and region

SIGNS

Rash in one quarter of body or across the back
 Small, round, papular lesions
 Thickening of the skin
 Swollen lymph glands in the groin
 Lump: under the skin
 Evidence of eye disease
 In later stages, loss of skin pigment

PATIENT CARE

- a. If the patient complains of pain in his eyes or difficulty with his vision, refer him to a hospital for treatment.

PREVENTION

The community must eliminate the breeding sites of the black fly. Find out how you can participate in control of the black fly.

CONTACT DERMATITIS

SYMPTOMS

Burning or itching rash
 History of new substance in contact with patient's skin, such as soap, lotions, oils, metals, detergents, medicines, drugs, or other chemicals

SIGNS

Macules, papules, or vesicles that weep and ooze
 Crusts from scratching and secondary infection
 Red skin surrounding lesions

117

PATIENT CARE

- a. Help the patient to identify the substance that caused his reaction. Tell him to avoid further contact with that substance.
- b. If the lesions are red and wet, teach the patient how to apply cold soaks three to four times a day. These will help to dry up the skin lesions and remove the crusts.
- c. Tell the patient to apply a drying lotion such as calamine lotion between soaks.
- d. If the skin lesions are red, dry, and itchy, tell the patient to apply 1% hydrocortisone ointment several times a day. To treat milder inflammation, apply calamine lotion.

- e. If the patient shows signs of anaphylactic shock, carry out the following procedures:
Place the patient flat on his back with his feet elevated about one-half meter above the level of his head. Loosen his collar and make certain that his airway is open.
Give the patient an injection of 1:1000 solution of epinephrine SC. Use the following dosages:

Adults and children	
40 kg and over	0.5 cc
Children	
20 to 40 kg	0.3 cc
10 to 20 kg	0.2 cc
10 kg and under	0.1 cc

SKIN REACTIONS TO DRUGS

SYMPTOMS

Itchy rash over any part of body
Fever, headache
History of having taken medicine in the last two weeks

SIGNS

Skin lesions of any kind
Often, flat or raised rash that itches

PATIENT CARE

- a. Tell the patient to immediately stop taking the drug that you suspect has caused the reaction.
- b. Encourage the patient to drink a lot of fluid. This fluid will help the body to get rid of the drug more quickly.
- c. If the patient has severe itching, give him 4 mg of oral chlorpheniramine every three or four hours. Give children one to five years of age 1 to 2 mg of oral chlorpheniramine

Record the patient's pulse, respiratory rate, and blood pressure every five minutes.

If possible, begin an intravenous infusion of normal saline solution as soon as you have given the patient epinephrine.

If the signs of shock continue, give the patient a second injection of epinephrine in five to ten minutes. Follow this with further injections as necessary. Use the same dosage of epinephrine as the first injection.

If signs of shock continue for more than thirty minutes, transfer the patient to a hospital as quickly as possible. Accompany him to the hospital so that you can continue to monitor his vital signs and give him epinephrine as required.

- e. If the skin develops vesicles and crusts, apply wet soaks three or four times a day to clear up the skin lesions.

DENTAL, EYES, EARS, NOSE, AND THROAT

Eye Problems

STY

SYMPTOMS

Pain in eye
Often past history of similar problems

SIGNS

Tender red lump on margin of eyelid

PATIENT CARE

- a. Show the patient and his family how to apply warm compresses to the sty. Boil one liter of water and add a teaspoon of salt. When the water cools sufficiently, soak a piece of clean cloth and apply it to the affected eye. Keep the cloth wet and warm by dipping it into the warm salt water every few minutes for up to half an hour. Tell the patient and his family to repeat this procedure four times a day until the swelling goes away.
- b. Tell the patient to apply 1% tetracycline eye ointment to his eyes four times a day after the warm compress treatment. Show him how to apply the ointment. See Patient Care Procedure for Application of Eye Ointment or Eyedrops.
- c. If the sty continues to become larger after forty-eight hours, refer the patient to a hospital.

CONJUNCTIVITIS

SYMPTOMS

Burning and redness of one or both eyes
Possible upper respiratory infection or other viral infection such as measles

SIGNS

Newborn
If patient is newborn, suspect gonococcal conjunctivitis

Viral infection
Watery discharge
Red conjunctivae

Bacterial infection
Pussy discharge
Red conjunctivae
Swelling of eyelids
Eyelids stuck together

PATIENT CARE

- a. If the discharge from the eye is clear and watery, and the patient has an upper respiratory infection, do not treat the conjunctivitis with an antibiotic.
- b. Examine the cornea very carefully under a good light. If you notice any roughness or ulceration, apply 1% tetracycline eye ointment and a patch. Refer the patient to a hospital immediately.
- c. If you see no roughness or ulceration, clean the eye and apply 1% tetracycline eye ointment. See Patient Care Procedures for Cleaning a Patient's Eyelids and for Application of Eye Ointment or Eyedrops.
- d. Show the family how to clean the eyes and apply the eye ointment. Tell them to carry out this procedure three or four times each day until the conjunctivitis clears up.
- e. Warn the family that conjunctivitis spreads very easily from one person to another. Tell them that each person must use his own wash water and towel when he washes himself.

TRACHOMA

SYMPTOMS

Itching, redness, and discharge in both eyes
Symptoms often present for at least a month

SIGNS

At early stage, inflammation of upper eyelids
Red, rough conjunctivae
Later, gray membrane on upper edge of cornea
Scarring of cornea and ulceration that lead to blindness

PATIENT CARE

- a. When you have a patient with evidence of early infection, teach him how to apply 1% tetracycline eye ointment. Tell him that he must apply the ointment three times a day for three weeks.
- b. When the conjunctivae are more than mildly inflamed, you must treat the patient with eye ointment. You must also instruct him to take an antibiotic by mouth. If he is over eight years of age, give him tetracycline. See Guide for Calculating Antibiotic Dosages. Continue the treatment for four weeks. As an alternative, treat the patient with an oral sulfonamide. Treat the patient either with a 500 mg/5 ml mixture of sulfadimidine, or with 500 mg sulfadimidine tablets, or with 500 mg sulfadiazine tablets. Give him a large initial dose. Then tell him to take the medication every six hours for ten days. Use the following dosages:

500 mg/5 ml mixture of sulfadimidine

	INITIAL DOSE	THEN EVERY SIX HOURS FOR TEN DAYS
Adults and children 40 kg and over	30 ml	10 ml
Children		
30 to 40 kg	20 ml	10 ml
20 to 30 kg	15 ml	7.5 ml
10 to 20 kg	10 ml	5 ml
Under 10 kg	5 ml	2.5 ml

500 mg sulfadimidine or sulfadiazine tablets

	INITIAL DOSE	THEN EVERY SIX HOURS FOR TEN DAYS
Adults and children 40 kg and over	3 g (6 tablets)	1 g (2 tablets)
Children		
30 to 40 kg	2 g (4 tablets)	1 g (2 tablets)
20 to 30 kg	1.5 g (3 tablets)	750 mg (1-1/2 tablets)
10 to 20 kg	1 g (2 tablets)	500 mg (1 tablet)
Under 10 kg	500 mg (1 tablet)	250 mg (1/2 tablet)

The patient taking an oral sulfonamide must drink extra water during his treatment.

- c. If you detect any ulceration or roughness on

the cornea, refer the patient to a hospital for treatment.

PREVENTION AND CONTROL OF TRACHOMA

- a. Trachoma spreads easily when people use the same wash towels and when they allow flies to land on their faces. Teach the community that good hygiene, cleanliness, and fly control will help to prevent trachoma.
- b. When you find a person with trachoma, look at all members of his family. If you suspect that other family members also have trachoma, treat them, too.

CATARACTS

SYMPTOMS

Blurred vision that gradually gets worse over months or years
No pain in eyes

SIGNS

Lens that appears whitish, completely white, or gray when you shine light into eye

PATIENT CARE

When you suspect that the patient has a cataract, refer him to a hospital. If he can still see light and some movement, surgery may improve his vision.

VITAMIN A DEFICIENCY

SYMPTOMS

Poor vision in the evening and at night
Clumsiness because of poor vision

SIGNS

Shiny surfaces of eye that become dull
Dry conjunctivae
Small gray plaques called Bitot's spots on outer margins of conjunctivae
Poor nourishment

PATIENT CARE

- a. When the only symptom of Vitamin A deficiency is night blindness, urge the family to feed the child foods that contain Vitamin A. Explain the relationship between eating

120

these foods and preventing eye disease. Foods that are rich in Vitamin A include dark green leafy vegetables, yellow vegetables, milk, eggs, and liver.

- b. If you note any dryness of the conjunctivae, or any Bitot's spots, give the patient a 25,000 unit capsule of Vitamin A by mouth.
- c. If Vitamin A deficiency is likely to occur again because the parents do not give the child more foods that contain Vitamin A, give the child 100,000 units of Vitamin A every six months until he reaches school age.
- d. If you notice any signs of damage to the cornea, give the patient 100,000 units of water-soluble Vitamin A IM. Give the child 100,000 units by mouth the next day. Patch the child's eyes and refer him to a hospital as quickly as possible.
- e. Always give children you treat for malnutrition 100,000 units of Vitamin A every six months.

PREVENTION

Effective community education can prevent eye disease caused by Vitamin A deficiency. Families must learn to grow and feed to their children dark green and yellow vegetables that are rich in Vitamin A.

FOREIGN BODY IN THE EYE

SYMPTOMS

Possible visible object in patient's eye
 Pain that worsens when patient blinks
 Pain that worsens in bright light

SIGNS

Usually one eye involved
 Red conjunctiva with tearing
 Foreign body visible on careful inspection

PATIENT CARE

- a. Follow the Patient Care Procedure for Locating and Removing a Foreign Body from the Eye.
- b. If you do not see any injury to the cornea, apply 1% tetracycline eye ointment. Cover the eye with a patch. Tell the patient to remove the patch in the morning. Also tell the patient to return if pain and redness continue in the eye.

- c. If you see any damage to the patient's cornea, patch both eyes and transfer the patient to a hospital. If you cannot send the patient to a hospital immediately, apply 1% tetracycline ointment to the eye. Patch both eyes. Reapply the ointment every six hours and keep the eyes patched until the cornea is healed and the eye appears normal. You must transfer the patient to a hospital as soon as possible.

PREVENTION

People who work in certain occupations must wear protective glasses. Whenever you discover men and women who are exposed to conditions that endanger their eyes, urge them to protect their eyes. Occupations such as stone cutting, welding, and metal work cause eye hazards.

CUTS AND ULCERS IN THE CORNEA

SYMPTOMS

Blurry vision
 Severe pain in eye
 History of trauma to the eye or infection in the eye

SIGNS

Tearing or discharge from eye
 White or gray spot or line on the cornea

PATIENT CARE

- a. Transfer patients with cuts or ulcers on their cornea to a hospital. Patch both eyes before transfer.
- b. If the patient cannot immediately go to the hospital, apply 1% tetracycline ointment. Tape an eye patch or sterile gauze pad over the eye. Reapply the eye ointment three times a day. Apply a clean eye pad after each application. Treat the patient daily until all signs of the cut or ulcer on the cornea have cleared up. Give the patient aspirin every four hours to ease pain. You must transfer the patient to the hospital as soon as possible.

PREVENTION

Encourage people who work in occupations that may endanger their eyes to wear protective glasses.

21

EYE EMERGENCIES

SYMPTOMS

Severe pain in one or both eyes
Loss of vision in one or both eyes
Sudden onset of pain or loss of vision

SIGNS

Decreased vision in eye
Possible redness around iris
Possible irregular or different sized pupils
Possible very small or very large pupils
Pupils that may not react to light
Possible clouded cornea

PATIENT CARE

Refer the patient with an emergency eye condition to a hospital immediately. Delay will cause loss of vision.

Dental and Mouth Problems

CANKER SORES

SYMPTOMS

Painful sores inside mouth
Probable history of canker sores

SIGNS

Flat, white ulcers with red edges on mucous membranes of mouth
Probable presence of several sores

PATIENT CARE

No treatment is available to hasten the rate of healing of canker sores. Tell the patient to avoid foods that irritate the ulcer. These include sour foods, chocolate, and nuts. Tell him to rinse his mouth with salt water after meals to keep the ulcers clean.

GINGIVITIS

SYMPTOMS

Painful or bleeding gums
Probable presence of other dental problems

SIGNS

Red, swollen gums
Space between teeth and gums
Food particles and tartar between teeth and gums
Hard plaque on teeth

PATIENT CARE

- Remove the hard plaque from the teeth with a scaling tool.
- Teach the patient how to brush his teeth properly. Ask him to demonstrate this to you.
- Tell the patient to rinse his mouth with a solution of equal parts warm water and 3% hydrogen peroxide. Tell him to rinse after every meal.

PREVENTION

Individuals can prevent inflammation of the gums by carefully brushing their teeth each day. You must also scrape off the plaque that builds up on the teeth. If you do not remove the plaque, it will irritate the gums.

ACUTE ULCERATIVE GINGIVITIS

SYMPTOMS

Severe pain in the mouth
Bleeding gums
Fever
Difficulty eating

SIGNS

Red, swollen, and bleeding gums
Ulcers on the gums at the teeth
Plaque and other signs of poor tooth and mouth care
Ulcers at the edge of the gingiva
Swollen lymph glands in the neck
Foul odor

PATIENT CARE

- Follow the Patient Care Guide for Gingivitis.
- In addition, give the patient an antibiotic. Give the patient procaine penicillin G IM daily for five days. Alternatively, give him oral penicillin V tablets. If he is allergic to

penicillin, use erythromycin or tetracycline. See Guide for Calculating Antibiotic Dosages.

- c. Swab the patient's gums with a cotton-tipped applicator soaked in 3% hydrogen peroxide. The hydrogen peroxide will help to rid the mouth of dead gum tissue.

TOOTH DECAY

SYMPTOMS

No symptoms until the decay is severe
Pain when eating hot or cold and sweet or acid foods
Toothache when the nerve is exposed

SIGNS

Early, dark spot on the surface of the painful tooth
Later, decay has destroyed part of the tooth, leaving a hole in the tooth

PATIENT CARE

- a. If possible, refer the patient to a dentist.
- b. Determine the severity of the decay. Test the nerve by asking the patient if hot, cold, sweet, or acid foods make the tooth hurt. If so, then the nerve is alive.
- c. Tap on the decayed tooth. Look for redness and swelling around the tooth. If tapping on the tooth causes pain, you must not fill the tooth. See Patient Care Guide for Dental Abscess. See Patient Care Procedure for Dental Extraction.
- d. If tapping on a decayed tooth does not cause pain, and the tooth is not aching or throbbing, fill the cavity. Follow the Patient Care Procedure for Temporary Filling.

PREVENTION

- a. Tell children and their parents how sweet foods and candy cause tooth decay.
- b. Tell parents to brush their teeth daily and to teach their children to brush their teeth daily also.

DENTAL ABSCESS

SYMPTOMS

Severe, continuous pain in one tooth
Possible fever

SIGNS

Severe pain when the tooth is tapped
Tooth may be loose
Swelling of the gums near the infected tooth
Swelling of the jaw or the entire side of the face

PATIENT CARE

- a. If you note swelling near the tooth, you must remove the tooth. However, you must treat the abscess before you remove the tooth.
- b. Give the patient an antibiotic. Procaine penicillin G IM for five days will be effective. Alternatively, give oral penicillin V tablets. If the patient is allergic to penicillin, use erythromycin. See Guide for Calculating Antibiotic Dosages.
- c. Teach the patient how to apply warm compresses to the swollen area. These compresses will ease the pain and promote healing.
- d. Give the patient 600 mg of aspirin every four hours for pain and fever.
- e. When the swelling has subsided, remove the infected tooth. See Patient Care Procedure for Dental Extraction.

PREVENTION

Prevent dental abscesses by treating tooth decay early.

Ear, Nose, Sinus, and Throat Problems

ACUTE UPPER RESPIRATORY TRACT INFECTION

SYMPTOMS

Runny nose
Dryness, tickling, or pain in the throat
Mild fever with headache
Coughing, sneezing, and hoarseness

SIGNS

Clear nasal discharge
Red eyes

123

Red throat
Tender, swollen lymph glands in the neck
Dry cough

PATIENT CARE

- a. Encourage the patient to drink at least one or two extra glasses of fluid between each meal.
- b. Give the patient 600 mg of aspirin every four hours for pain and fever. Give children 60 mg of aspirin for each year of age, up to age ten.
- c. Encourage the patient to rest more than he normally does.
- d. Give the patient a cough expectorant such as glyceryl guaiacolate, and tell him to take one teaspoonful every four hours.
- e. Tell the patient to return if he suddenly develops a high fever after several days of improvement. Tell him to return if his ears start to ache or his throat becomes more painful. These symptoms often indicate that the patient has developed a bacterial infection that requires treatment with an antibiotic.

ACUTE OTITIS MEDIA

SYMPTOMS

Sudden onset of severe pain in one or both ears

Decreased hearing in the infected ear

Possible high fever in infant or young child, with crying for no apparent cause

SIGNS

High fever

Infant or child irritable, pulls at his ear

Discharge in the ear canal often associated with decreased pain

PATIENT CARE

- a. Treat the patient with an oral antibiotic. Use ampicillin or penicillin V four times a day for seven days. See Guide for Calculating Antibiotic Dosages.
- b. Teach the patient or his parent how to put 0.25% phenylephrine hydrochloride nose

drops into each nostril three times a day for three or four days.

- c. Give the patient aspirin to control pain and fever. Tell him to take 600 mg of aspirin every four hours. Give children 60 mg of aspirin for each year of age, up to age ten.
- d. If the patient has lost his hearing, or the condition has not improved after one week, refer the patient to a hospital. Also refer patients whose infected ears continue to drain after one week.

CHRONIC OTITIS MEDIA

SYMPTOMS

Foul-smelling, pussy discharge from one or both ears

SIGNS

Foul-smelling, pussy discharge from the infected ear for more than two weeks

Hearing loss

PATIENT CARE

- a. Treat the patient with oral penicillin V or ampicillin four times a day for two weeks. Explain the importance of taking the medicine regularly. Patients often do not take the drug regularly, and it is not effective unless they take it four times a day for two weeks. See Guide for Calculating Antibiotic Dosages.
- b. Teach the family how to clean the pus out of the ears. See Patient Care Procedure for Cleaning Pus from a Draining Ear. The patient should dry the ear canal at least three times a day. Ask the patient to demonstrate the technique of cleaning the ear.
- c. If the drainage continues for more than two weeks, or if the patient loses hearing, refer him to a hospital.

PREVENTION

Chronic otitis media results from improper treatment of acute otitis media. Insist that the patient with acute otitis media take the antibiotic drug as directed. Teach parents not to apply drugs directly to the infected ear.

MASTOIDITIS

SYMPTOMS

Ear pain or pain behind the ear
Fever and headache
Often draining pus from the ear

SIGNS

Recent history of ear infection
Tenderness in mastoid bone, when tapped
Warm, red, and swollen mastoid area

PATIENT CARE

If you note the signs of mastoid bone infection, refer the patient to a hospital. Give him aspirin for pain.

EXTERNAL OTITIS

SYMPTOMS

Pain in ear
History of swimming in dirty water

SIGNS

Sharp pain when ear lobe is pulled or pushed
Scaly, red rash in the ear canal
Rash possibly wet and weepy
Swollen ear canal
Tender, swollen lymph glands below the ear

PATIENT CARE

- a. Give the patient aspirin to control his pain and discomfort.
- b. Teach the family how to gently clean the ear canal with a swab daily to keep the canal clean. See Patient Care Procedure for Cleaning Pus from a Draining Ear.
- c. When the ear canal is weepy, use warm water soaks to relieve pain and to help dry the ear canal. Teach the mother how to apply wet compresses to the ear. Tell her to apply the wet compresses for thirty minutes four times a day. Teach her to dry the ear canal after applying wet compresses. Tell her to place several drops of 70% alcohol in the ear canal several times a day. The alcohol will help to dry the skin.
- d. Keep the ear dry. Encourage the patient not to swim until the infection clears up.
- e. If the patient has fever and swelling of the

lymph glands near his ear, give him an oral antibiotic such as penicillin V or erythromycin for seven days. See Guide for Calculating Antibiotic Dosages.

WAX IN THE EARS

SYMPTOMS

Loss of hearing
Fullness and discomfort in the ear
History of cleaning ear with finger, bit of wood, or small instrument

SIGNS

Dark, wax-like material in the ear canal

PATIENT CARE

- a. Soften the wax. Tell the family to place several drops of 3% hydrogen peroxide solution or glycerin baby oil into each ear canal several times a day for a week.
- b. After the wax has become soft, use a large syringe to gently irrigate the ear canal with warm water.
- c. Prevent wax from becoming packed into the ear canal. Tell the family that attempting to clean the ear canal often forces the wax down into the canal. Tell them to clean only the outer ear.

ACUTE SINUSITIS

SYMPTOMS

Headache and fever with chills
Severe pain over sinus

SIGNS

Thick, pussy discharge from the nose
Tender sinus, when tapped
Possible swelling and redness over sinus area

PATIENT CARE

- a. Treat the patient with an oral antibiotic four times a day for one week. If the patient is not allergic to penicillin, use penicillin V or ampicillin. Otherwise, use erythromycin or tetracycline. See Guide for Calculating Antibiotic Dosages.

- b. Teach the patient or his parent how to put nose drops such as ephedrine or 0.25% phenylephrine hydrochloride into each nostril three to five times a day for three or four days. Warn the patient not to use the drops for longer than four days. Also warn him that his nose may feel more congested several hours after use of nose drops.
- c. Give the patient aspirin for discomfort and fever. Give adults 600 mg every four hours. Give children 60 mg for each year of age, up to age ten.
- d. Warm compresses applied to the sinus area will help to relieve discomfort. Tell the patient to apply these as often as he desires.

ACUTE BACTERIAL TONSILLITIS

SYMPTOMS

Sudden onset of cough, high fever, chills, sore throat, and difficulty swallowing
Recent history of runny nose, cough, sore throat, aches and pains, fever

SIGNS

Swollen, red tonsils
White or yellow exudate on the tonsils
Tender, swollen lymph glands in the neck

PATIENT CARE

- a. Encourage the patient to rest in bed for a few days.
- b. Give the patient 600 mg of aspirin every four hours. Give children 60 mg for each year of age, up to ten years of age. If the child's temperature is very high, show the parents how to sponge the child. See Guide for Reducing Fever.
- c. Show the patient how to gargle with warm salt water three or four times a day. Gargling with warm salt water may relieve some throat discomfort.
- d. To treat bacterial tonsillitis, give the patient an oral antibiotic such as penicillin V or ampicillin. Tell him to take the drug four times a day for a full ten days. Alternatively, give him an injection of benzathine penicillin. See Guide for Calculating Antibiotic Doses.

FOREIGN BODY IN EARS, NOSE, AND THROAT

SYMPTOMS

Ear

Pain and irritation of the ear canal

Nose

Blocking of one nostril
Pussy, foul-smelling discharge
Sneezing and pain

Throat

Coughing and gagging
Noisy breathing
Hoarseness
Pain in the neck
Possible history of vomiting while unconscious
Possible history of eating hastily and choking on food
In a child, short, hacking cough

SIGNS

Foreign body visible in the nose, with use of speculum
Small, foreign body visible in back of the throat, near tonsils, or in pharynx

PATIENT CARE

- a. Foreign body in the nose
Use nasal forceps to remove a foreign body in the nose. Use a good light source. Tell the patient to lie down flat on his back. Put the forceps into the nostril and grasp the foreign body. If you cannot remove the foreign body, refer the patient to a hospital.
- b. Foreign body in the ear
Hold a large ear syringe next to the ear and flush the ear canal with warm water. See Patient Care Procedure for Removing a Foreign Body from an Ear. If you cannot remove the foreign body, refer the patient to a hospital.
- c. Foreign body in the throat
You may remove a foreign body in the back of the throat with a pair of long forceps. When the airway is blocked, you must attempt to remove the foreign body immediately. Use the emergency measures described in the Patient Care Procedures for Using Back Blows or Using Manual Thrusts to Clear a Person's Blocked Airway.

NOSEBLEEDS

SYMPTOMS

Sudden bleeding from one nostril
Possible history of recent upper respiratory tract infection

SIGNS

Possible high blood pressure
Possible signs of shock
Possible signs of anemia

Ulceration and irritation of the mucous membrane of the nose

PATIENT CARE

- a. If the patient's nose is bleeding into the back of the throat, refer him to a hospital. This type of bleeding is difficult to stop.
- b. When the blood comes from the nostrils, follow the Patient Care Procedure for Controlling Nosebleeds.

INFECTIOUS DISEASES

Infectious Diseases Commonly Spread through the Soil or Water

TYPHOID FEVER

SYMPTOMS

Fever with headache, weakness, cough, sore throat, or loss of appetite
Increased fever daily for first week of illness
Nausea, vomiting, and abdominal pain
Diarrhea or constipation

SIGNS

Step-ladder fever pattern over first week, followed by constant high fever
Low pulse rate, twenty to forty beats per minute slower than expected for level of body temperature
Swollen, tender abdomen

PATIENT CARE

- If you suspect typhoid fever, transfer the patient to a hospital.
- If you must delay transfer, begin treatment with chloramphenicol in a dosage of 50 to 100 mg per kilogram of body weight daily. Use the following dosages:

Adults and children
40 kg and over 1000 mg every six hours

Children
20 to 40 kg 500 mg every six hours
10 to 20 kg 250 mg every six hours
5 to 10 kg 150 mg every six hours

Do not use chloramphenicol in children under two months of age.

- If the patient is dehydrated, encourage him to take oral fluids every two to three hours. Bring his fever down with sponges and aspirin. See Patient Care Guide for Reducing Fever.

PREVENTION

- Typhoid fever spreads from one person to another when an infected person contaminates food and water. Teach community members how to protect their drinking water from contamination. Teach them to boil or chlorinate all water during an out-

break of typhoid fever.

- Dispose of the stool from a typhoid patient carefully. Use a latrine that cannot contaminate food or water. Protect the latrine from flies.
- Wash your hands carefully after working with the patient. Teach the patient and his family to wash their hands after using the latrine and before cooking or eating.

TETANUS IN CHILDREN AND ADULTS

SYMPTOMS

No history of tetanus immunizations
Cut, wound, or ulcer of the skin within previous two weeks
Tingling and muscle spasm around cut, wound, or ulcer of the skin
Tightening of the jaw muscles
Difficulty opening mouth, chewing, and swallowing

SIGNS

Cut, wound, or ulcer of the skin
Muscle spasms near the wound or in neck or jaw
Muscle spasm or convulsions that are set off by noises or by touching or moving patient
Tightening or spasm of face and jaw muscles, causing a rigid smile

PATIENT CARE

- Clean the wound or ulcer immediately. The tetanus bacteria produce toxin rapidly. You must cut out all dead or dirty tissue from the wound. Follow Patient Care Procedure for Removing Dead Tissue from a Wound.
- Transfer the patient to a hospital as quickly as possible. He must receive tetanus anti-toxin.

- c. Sedate the patient. If he is having muscle spasms, give him diazepam (Valium). Give an adult 10 mg of diazepam, diluted in 10 ml of sterile water for injection, over a ten-minute period every six hours. Give children 1 mg per kg of body weight IV every six hours up to maximum of 10 mg. Inject the diazepam slowly, over a ten minute period.
- d. If the patient has had any convulsions, give him amobarbital in addition to the diazepam. Give adults 200 mg IM every six hours. Give children 5 mg per kg body weight IM every six hours, up to a maximum dose of 150 mg.
- e. Give the patient 720 mg of benzylpenicillin G IM every six hours. A high dose is required to reach the bacteria within the wound. If the patient is allergic to penicillin, use tetracycline or erythromycin. See Guide for Calculating Antibiotic Dosages.

PREVENTION

- a. Immunize all infants with a series of four DPT shots. Give the shots at three months, five months, seven months, and eighteen months. Give children a DT booster injec-

tion before they start school. Further boosters every ten to fifteen years throughout life will prevent tetanus in individuals who work in occupations, such as farming, that increase the risk of tetanus infections.

- b. Give pregnant women two tetanus toxoid injections, four to six weeks apart, in the latter half of pregnancy. Repeat the tetanus booster with each subsequent pregnancy. This will protect the newborn as well as the mother.
- c. Carefully evaluate patients with any of the following conditions:

- An infected wound or wound more than twenty-four hours old
- A puncture wound
- A skin ulcer with dead tissue or gangrene
- Recent surgery with unsterile instruments, especially infants who have had circumcisions or the umbilical cord cut with unsterile instruments
- A recent abortion or miscarriage followed by fever or foul discharge
- An infant whose mother did not receive tetanus immunization

Preventing Tetanus in a Patient With a Wound

WOUND	TETANUS IMMUNIZATION	ACTION
Fresh wound, minor	Active immunization and booster in last ten years	Clean wound and remove dead tissue.
Fresh wound, minor	Active immunization, but no booster or does not remember	Clean wound and remove dead tissue. Give tetanus booster.
Fresh wound, minor	No immunization, or does not remember	Clean wound and remove dead tissue. Start tetanus immunization series.
Old wound, or more serious wound	Active immunization and booster in last ten years	Clean wound and remove dead tissue. Treat with oral penicillin.
Old wound, or more serious wound	Active immunization, but no booster or does not remember	Clean wound and remove dead tissue. Treat with oral penicillin. Give tetanus booster.
Old wound, or more serious wound	No immunization, or does not remember	Clean wound and remove dead tissue. Treat with oral penicillin. Start tetanus immunization series. See patient daily until wound is clean and healing well.

129

Infectious Diseases Commonly Spread by Animals or Insects

RABIES

SYMPTOMS

- Dog bite or bite from other animal known to carry rabies
- Restlessness, fear, depression

SIGNS

- Animal bite, possibly healed
- Restlessness, depression, fear
- Later, patient becomes very excitable
- Spasm of throat muscles, with saliva draining from mouth
- Fear of swallowing fluid or food
- Fear of the sight of water because of spasm of throat muscles

CARE OF ANIMAL BITES

- a. Animal bites often become infected. They are a source of tetanus infection as well as rabies. You must cleanse the wound by flushing it with a large volume of clean water. Cut out any dead tissue. Follow the Patient Care Procedure for Removing Dead Tissue from a Wound. Do not suture the wound. Put a sterile dressing on the wound. Keep the dressing dry. Change the dressing daily.
- b. If the wound is more than four hours old when you first see the patient, give the patient 250 mg of oral penicillin V every six hours for five days.
- c. If the patient has had a tetanus toxoid series and a booster within the last ten years, he is protected against tetanus. However, give him a booster if he has not had a booster in the last ten years. If he has never been immunized, begin a series of immunizations immediately.
- d. Whenever the patient has been bitten by an animal, attempt to locate the animal and cage it for observation. If the animal remains healthy for at least ten days, the patient is not in danger of developing rabies.
- e. Transfer the patient to a hospital for anti-rabies treatment in the following situations:
 - The animal was killed or escaped

The animal was sick when it bit the patient

The animal becomes sick during the ten-day period of observation

The animal bit the patient on the neck or face

Rabies can develop within ten days when the bite was on the face or neck. You cannot wait to observe the animal. You must transfer the patient to a hospital immediately for anti-rabies injections.

- f. When the symptoms of rabies appear, the patient will die within a few days. If possible, transfer him to a hospital. Keep him as comfortable as possible.
- g. Relieve the patient's pain. Use 100 mg of pethidine IM every three to four hours. Sedate the patient with 200 mg of amobarbital IM every six hours.
- h. Avoid rabies infection. Your patient's saliva contains the rabies virus. It can infect you through cuts or sores on the skin. Wear gloves when you touch the patient, wipe saliva from his mouth, and dispose of his body wastes. Wash your hands with soap and water after any contact with a rabies patient.

PREVENTION

Killing stray dogs, cats, and other animals that are known to carry rabies will help prevent the spread of rabies. Encourage community members to avoid and report any animal that is acting strangely.

MALARIA

SYMPTOMS

- High fever, shaking chills, and headache
- Pattern of fever and chills that recurs every one to four days
- History of malaria in the community or region, or patient from area with history of malaria

SIGNS

- Pattern of fever and chills
- Weakness
- Anemia
- Jaundice
- Enlarged, tender spleen

PATIENT CARE

- a. Give the patient 250 mg chloroquine phosphate tablets. Because chloroquine is bitter, give it with sugar or honey. Use the following dosages:

	INITIAL DOSE	SIX HOURS LATER	DAILY FOR NEXT FOUR DAYS
Adults and children 40 kg and over	1000 mg	500 mg	500 mg
Children			
20 to 40 kg	500 mg	250 mg	250 mg
10 to 20 kg	250 mg	125 mg	125 mg

- b. If the patient vomits less than an hour after swallowing the drug, repeat the dose. If the vomiting is severe, give the patient 65 mg/ml solution of chloroquine phosphate by injection. Give adults intramuscular injection. Give children subcutaneous injection. Use the following dosages:

Adults: 5 ml. If the patient cannot take the drug by mouth after six hours, repeat the injection. Repeat every six hours for twenty-four hours, if necessary.

Children: 0.25 ml per kg of body weight subcutaneously. Do not give children chloroquine phosphate IM. If the patient is still vomiting after six hours, repeat the subcutaneous injection. Repeat one time only, and only if necessary. Start the child on chloroquine phosphate tablets as quickly as possible.

- c. Encourage the patient to drink as much fluid as possible. The fever and vomiting will dry out his body very rapidly.
- d. If vomiting is very severe, start an intravenous infusion. Give the patient 1000 cc of 5% dextrose in 1/2 normal saline over twelve hours.
- e. Bring down the fever with sponging and aspirin.
- f. Obtain a blood smear for laboratory confirmation of the diagnosis. See Patient Care Procedure for Preparing Blood Smears for Diagnosis of Malaria.
- g. Malaria is an important cause of anemia. Treat the patient for anemia. Give prenatal patients iron tablets with folic acid.

- h. Treat a patient with malignant or cerebral malaria as a medical emergency. If the patient has a very high fever, convulsions or coma, or evidence of shock, transfer him to a hospital as quickly as possible. Begin treatment for shock by starting an intravenous infusion with normal saline or Ringer's lactate.

- i. Before transfer, begin treatment with intravenous quinine dihydrochloride. Use the following dosages:

Adults: 600 mg in 500 ml of normal saline given over thirty to sixty minutes. Repeat in twelve hours.

Children: 10 mg per kg of body weight in 300 ml of normal saline given over one hour. Repeat in twelve hours.

- j. Bring down the fever with cool sponging. Check the rectal temperature every ten minutes. Stop sponging the patient when the temperature falls below 39°C. Otherwise, the temperature may fall to dangerously low levels.

PREVENTION

- a. Infected mosquitoes spread malaria. Find out what kinds of mosquitoes are responsible for spreading malaria in your area. Work with your community leaders to eliminate the places where these mosquitoes breed.
- b. When insecticide spraying is part of the malaria control program, assist the malaria control team in gaining the full cooperation of the community. In order for spraying to be effective, the malaria control team must spray every home.
- c. Teach community members the importance of preventing mosquito bites. Measures such as sleeping under a mosquito net and wearing long pants after dusk will reduce the spread of malaria within the community.
- d. Where malaria is not resistant to chloroquine phosphate tablets, a weekly dose can protect people from the disease. Use the following dosages:

Adults	500 mg
Children	
Three to ten years of age	250 mg
Under three years of age	125 mg

- e. When you encounter patients with fever of unknown cause, or suspected malaria, obtain a blood smear. See Patient Care Procedure for Preparing Blood Smears for Diagnosis of Malaria. The malaria control program uses these blood smears to determine the extent of malaria in the community.

LOUSE-BORNE TYPHUS

SYMPTOMS

Cold or flu symptoms for two to three days
Sudden onset of severe headache, high fever, and chills

Red rash on the abdomen, which spreads rapidly

Often, more than one patient with similar illness

SIGNS

High, constant fever

Bright red face

Red eyes

Flat, red rash that develops on abdomen and spreads, becoming like many small bruises

Confusion, delirium

PATIENT CARE

- a. If you suspect typhus, refer the patient to a hospital immediately.
- b. Notify your supervisor. Typhus often occurs as an epidemic. You must take control measures to protect the community.
- c. Tetracycline and chloramphenicol are effective drugs in treatment of typhus. Give the patient 500 mg of oral tetracycline or chloramphenicol every six hours. The patient must continue to take the drug for three days after his temperature has returned to normal. For children, see Guide for Calculating Antibiotic Dosages.
- d. Eliminate the lice from the patient and his family. First wash the patient with soap and water, and instruct the family members to wash themselves. Then apply 1% gamma benzene hexachloride cream. Tell the family to leave the cream on the skin for twenty-four hours. Tell them to wash all clothes and bedding with soap and hot water. Tell them to repeat these procedures after one week.

PREVENTION

- a. When an epidemic of typhus threatens the entire community, everyone must be deloused. If you suspect an outbreak, contact public health authorities for help.
- b. Typhus vaccine will help to prevent the disease. Immunize yourself and other health team members against typhus, if cases occur and typhus vaccine is available.

Infectious Diseases Commonly Spread from Person to Person

MENINGITIS

SYMPTOMS

Newborn with history of complication during labor or delivery

Irritability, drowsiness, poor suck, convulsions, fever

Child or adult with possible history of upper respiratory infection; earache; boil on face, head, or neck

Sudden onset of high fever, severe headache, vomiting

Neck pain

SIGNS

Newborn or infant with tight or bulging anterior fontanelle

Infant looks very ill

Child or adult with high fever

Neck stiffness or tenderness on flexing neck

Patient's legs bend and draw up when you flex his neck

Fever of unknown cause may be meningitis

PATIENT CARE

- a. Transfer the patient to a hospital. Go with the patient, if necessary, to be sure that he receives immediate attention. If you have started an intravenous drip, keep it operating during transfer to the hospital.
- b. If you suspect that the patient has tubercular meningitis, do not start antibiotic treatment.
- c. For all other suspected meningitis cases, begin antibiotics before leaving for the hospital. Use the following dosages:

Adults

3 g benzylpenicillin G IV or IM immediately. Then 9 g benzylpenicillin G in 500 ml normal saline for IV infusion. Continue the IV while you transfer the patient to a hospital.

Children over seven

1 g ampicillin IV over five to ten minutes. Repeat this dose every four hours. Alternatively, give ampicillin IM in the same dosage.

Children under seven

1 g ampicillin IV over five to ten minutes. Repeat this dose every four hours. Alternatively, give ampicillin IM in the same dosage.

In addition, give oral chloramphenical, 25 mg per kg of body weight, every four hours, to combat different bacteria the child may have that ampicillin may not effectively treat.

Infants

400 mg ampicillin IM every six hours

- d. Bring down the patient's temperature. If the patient's fever is very high, use cloth and cool water. Sponge the patient's entire body. If the patient can swallow, give him 600 mg of aspirin by mouth.

PREVENTION

- a. Tubercular meningitis will rarely develop if the patient is under treatment for tuberculosis. Although the signs and symptoms are the same, tubercular meningitis develops over several weeks.
- b. A patient with infection on his face, or in his ears or sinuses, or with infection elsewhere in the body, is more likely to develop meningitis than patients without these infections. Treat these infections vigorously.
- c. Report all patients with meningitis to your supervisor. An epidemic of meningitis requires additional preventive measures.

DIPHTHERIA

SYMPTOMS

No history of immunization against diphtheria

Possible history of throat or ear infection
Cough, sore throat, runny nose, fever, and hoarseness
High fever
Difficulty breathing
Very painful sore throat

SIGNS

Bright red throat
Gray membrane across tonsils and pharynx that bleeds when scraped away
Very swollen lymph glands in neck
High fever

PATIENT CARE

- a. If you suspect diphtheria, transfer the patient to a hospital immediately. He must receive diphtheria antitoxin as soon as possible.
- b. Before transfer, give the patient 600 mg of procaine penicillin G IM. If he is allergic to penicillin, give him 250 mg of oral erythromycin.
- c. Immunize other children in the family against diphtheria and tetanus.

PREVENTION

- a. Diphtheria rarely occurs in persons who have received the four-shot DPT series of immunizations in infancy, followed by a booster shot at school age.
- b. During an outbreak of diphtheria, give booster shots of DT vaccine to those people who have been immunized previously. Do not give the DT vaccine to anyone who has not previously been immunized. The DT vaccine can cause serious reactions. When treating anyone who has not previously been immunized, use only adsorbed purified "adult type" (Td) toxoid.

LEPROSY

SYMPTOMS

Light colored patch on skin
Painless injury to hands and feet

SIGNS

Loss of sensation in hands and feet
Light colored, flat skin patch with sharp

INFECTIOUS DISEASES

edges and no sensation when touched lightly

Enlarged, tender peripheral nerves

PATIENT CARE

- a. When you suspect that the patient has leprosy, seek a second opinion before starting treatment. Refer the patient to a hospital or ask him to return to the health center when your supervisor will be present.
- b. When you have confirmed the diagnosis, begin treatment with dapson. Begin with a very small dose and increase the drug slowly. Use the following dosage schedule:

	ADULTS	CHILDREN 12 TO 30 KG	CHILDREN BELOW 12 KG
First four weeks	25 mg twice weekly	25 mg once weekly	10 mg once weekly
Second four weeks	50 mg twice weekly	25 mg twice weekly	10 mg twice weekly
Third four weeks	100 mg twice weekly	50 mg twice weekly	25 mg twice weekly
After three months for tuberculoid leprosy	200 mg twice weekly	100 mg twice weekly	50 mg twice weekly
For lepromatous and borderline leprosy	300 mg twice weekly	150 mg twice weekly	75 mg twice weekly

the drugs faithfully. Review his drugs with him at each visit.

- f. Prevent injuries and contraction deformities. Teach the patient how to protect himself from injuries. This is very important if he has any loss of sensation in his hands or feet. Help the patient obtain footwear that will protect him from injury. Teach him to carefully inspect his hands and feet daily and treat any injury promptly. Teach the patient to stretch any joints that are paralyzed. He must carry out these stretching exercises many times each day to prevent deformity and contractures.

- c. Tell the patient to return each week for the first month. During the second month, tell him to return every other week. Examine him carefully for any signs of a reaction. These include increased swelling and tenderness of peripheral nerves; swelling and redness of skin lesions; fever; swelling of joints; swelling of lymph glands; swelling and tenderness of testes; swelling and blockage of nose.
- d. If any signs of reaction develop, refer the patient to a hospital. Explain the symptoms of reaction to the patient. Encourage him to return to see you if any of these symptoms develop.
- e. Teach the patient the importance of taking

PREVENTION

- a. Examine all members of your patients' families at least every six months for signs of leprosy. Begin treatment promptly if you detect leprosy among other members of a leprosy patient's family.
- b. Educate the community about leprosy. Teach the community that leprosy can be controlled. Encourage community members to look for early signs of the disease and seek treatment for it.
- c. Cooperate in the leprosy control program in your area.

OTHER COMMON PROBLEMS

Low Back and Joint Problems

LOW BACK PAIN CAUSED BY MUSCLE STRAIN OR SPRAIN OF THE SACROILIAC JOINT¹

SYMPTOMS

Pain in lower back
History of lifting heavy objects within previous twenty-four to forty-eight hours

SIGNS

Possible inability to stand upright because of low back pain
Spasm and tenderness of the strained muscles
Tenderness over sacroiliac joint
No sharp back or leg pains during straight leg raising test
No loss of sensation in either leg or foot

PATIENT CARE

- Encourage the patient to rest and sleep on a firm, flat surface.
- Tell the patient that he must avoid any activities that cause back pain. When the pain has gone away, then he can gradually begin these activities once more.
- Show the patient's family how to apply warmth to the painful areas. Use warm water bottles or hot bricks wrapped in cloth.
- Tell the patient to take 600 mg of aspirin every four hours to help relieve pain.
- Massage is an important technique for reducing muscle spasm. Many traditional practitioners are experts in giving massage.
- If the pain continues for more than two weeks, refer the patient to a hospital.

PREVENTION

- If the pain occurred while the patient was working or carrying heavy objects, demonstrate to him how to lift and carry objects without straining his back.
- Encourage the patient to sit and stand using good posture. Tell him that the bones of the neck, back, and legs should carry most of the

weight of the body. When the bones carry the body's weight, the muscles are relaxed and available for carrying out movements.

LOW BACK PAIN CAUSED BY DISK DISEASE

SYMPTOMS

Sudden onset of severe, sharp pain in one side of lower back
Often, pain that radiates down the leg to the foot
No history of injury from heavy work
Previous episodes of back pain months or years earlier

SIGNS

Sideways curvature of lower spine
Flattening of normal curve of lower spine
Limited and painful movement of lower spine
Tenderness over sciatic nerve
Positive straight leg raising test
Loss of muscle strength and sensation in leg and foot on the affected side

PATIENT CARE

- Tell the patient to sleep on a firm, flat surface such as a thin mattress supported by a board. Tell him he may be more comfortable if he places a pillow or blanket under his knees and raises his back slightly.
- Tell the patient to take 600 mg of aspirin every four hours to help relieve pain.
- Tell the patient he must remain at complete rest for as long as two weeks, until he is able to walk around without pain. Then he should very gradually return to full activity over a period of several months.
- If the pain has not begun to improve after a week, or is not gone after two to three weeks, refer the patient to a hospital for further evaluation. Several weeks of leg traction may relieve the pressure on the nerves.

However, if simple methods are not effective, the patient may require surgery.

OSTEOARTHRITIS

SYMPTOMS

Pain in joint for months or years
 Usually large weight-bearing joint affected
 Usually older person affected
 In younger patient, possible history of injury to the joint
 Neck or back possibly affected

SIGNS

Limited movement of affected joint
 Tenderness or roughness with movement of affected joint
 Possible swelling from fluid around affected joint
 Possible swelling, warmth, and tenderness of distal joints of fingers

PATIENT CARE

- a. Teach the patient that his osteoarthritis will last for the rest of his life. Help him understand that he must learn to live with the condition by putting less stress on his joints and by resting more.
- b. Tell the patient that he must rest the joint or joints that are causing him pain. This may require him to reduce or stop certain activities.
- c. Tell the patient to apply warmth to the joints for up to twenty minutes several times a day. Warm water soaks are simple, effective means of applying heat.
- d. Tell the patient that 600 mg of aspirin every four to six hours will provide some relief. Warn him about the stomach irritation that aspirin can cause.
- e. When the patient's neck is affected, tell him to sleep with a firm pillow. If the patient has signs of weakness or pain in his arms, refer him to a hospital.
- f. If the patient is overweight, loss of weight will reduce the strain on his joints. Help him to lose weight.
- g. Tell the patient that use of a cane or crutch can help reduce pain in the hips or knees.

RHEUMATOID ARTHRITIS

SYMPTOMS

Fatigue and fever
 Loss of appetite and weight
 Stiffness and pain in joints in the morning and evening
 Difficulty, because of joint pain, carrying out daily activities
 More than one joint affected

SIGNS

Warmness, redness, and tenderness of affected joints
 Spindle-shaped deformity of the fingers
 Marked loss of movement of the affected joints

PATIENT CARE

- a. During periods when the disease is active, urge the patient to remain in bed during the day. His body requires the extra rest. He must also rest the inflamed joints. If the hips or knees are inflamed, the patient should lie down for one to two hours several times during the day. Splint other joints so that the patient will rest them except when he exercises them to prevent loss of motion.
- b. Teach the patient and his family how to exercise the inflamed joint. Show them how to move the joint through its full range of motion at least three or four times during each exercise period. Tell the patient to repeat these exercises at least four times each day. Tell him that his family should exercise his joint while he relaxes his own muscles. Then he should attempt to move the joint, using the muscles that control the joint. The patient may find that moving the joint himself is more painful and more difficult. But it is very important to prevent atrophy of the muscles around the joint and to build up the strength of the muscles.
- c. Tell the patient to take 900 mg of aspirin every four hours. Tell him to reduce this dosage by one tablet each day if he notices ringing in his ears or abdominal pain. Tell him to take the aspirin with meals, and at bedtime with an antacid. By doing so, he will lessen the irritation of the stomach. Tell the patient that to benefit from aspirin, he must take the largest dose that he can tolerate.

SEPTIC ARTHRITIS

SYMPTOMS

Severe throbbing pain in a single joint
Chills and fever
Signs or symptoms of gonorrhea

SIGNS

Large, weight-bearing joint usually affected
Swelling, redness, tenderness of affected joint
Severe limitation of movement of affected joint

PATIENT CARE

- a. Rapid healing requires very high levels of antibiotics. Sucking the pus out of the joint may also be required. For these reasons, transfer the patient to a hospital after you start treatment.
- b. If the swelling and tenderness of the joint do not begin to improve within twenty-four to forty-eight hours of starting treatment, you must transfer the patient to a hospital. Removal of fluid from the joint and more vigorous treatment of the patient are necessary to prevent destruction of the joint.
- c. If you must treat the patient, keep him in bed at the health center. Start an intravenous infusion with 5% dextrose in water or 5% dextrose in 1/2 normal saline. You can use the infusion for giving antibiotics.
- d. Splint the affected joint so that it is bent slightly. Keeping the joint from moving will reduce the pain. Often, the patient will be more comfortable if you keep the joint slightly higher than the rest of the body.
- e. Give the patient 3 g of benzylpenicillin G IV every six hours. Continue this dosage for at least seventy-two hours. Then change the dosage to 1.5 g of benzylpenicillin G IM every six hours. Continue this dosage for at least one additional week. You must use sterile needles or you will cause severe abscesses at the injection sites.
- f. In addition to penicillin, give the patient oral chloramphenicol. Because you will not know the cause of the arthritis, you must give a second antibiotic. Chloramphenicol will attack many bacteria that penicillin will not attack. Use the following dosages:

Adults 500 mg every six hours

Children
20 to 40 kg 375 mg every six hours
10 to 20 kg 250 mg every six hours
5 to 10 kg 125 mg every six hours

Continue chloramphenicol for at least ten days. Do not use chloramphenicol in infants under two months of age.

- g. Give the patient a spirin every four hours to relieve discomfort and help to reduce fever. Use aspirin only as required for this purpose. You may also apply warm compresses to the joint to relieve pain.
- h. As soon as the fever comes down and the swelling and tenderness of the joint begin to improve, move the joint through as full a range of motion as possible. Repeat this movement at least four times each day. This is an important way to prevent the joint from freezing in one position. Encourage the patient to move the joint, using his own muscles, at least four times a day.
- i. Transfer the patient to a hospital as soon as possible.

Thyroid Problems

SIMPLE GOITER

SYMPTOMS

Large swelling in front of the neck

SIGNS

Smooth or nodular enlargement of thyroid gland

PATIENT CARE

- a. When the patient has no symptoms of too much or too little thyroid hormone activity, treatment is not necessary
- b. If the goiter is so large that the patient has symptoms from pressure of the gland within the neck, refer him to a hospital.
- c. When the soil contains too little iodine, urge the patient and his family to use iodized salt instead of ordinary salt. Iodized salt will provide the body with the required amount of iodine.

OTHER COMMON PROBLEMS

PREVENTION

- a. If you practice in a region where many people have goiters, work with your community leaders to promote the use of iodized salt. Iodized salt will provide most people with enough iodine to prevent goiters.
- b. Women require extra iodine during pregnancy and lactation. In an iodine-deficient region, intramuscular injection of iodine every three years to women who are bearing children will help to prevent the birth of infants with symptoms of too little thyroid activity.

HYPOTHYROIDISM

SYMPTOMS

Lack of energy
Weakness and tiredness
Large swelling in front of neck
Severe constipation
Abnormal sensitivity to cold
In women, long menstrual periods with heavy bleeding

SIGNS

Thick, dry skin
Puffy, dull face
Coarse, brittle hair
Slow movements and speech
Slurred speech with low-pitched, hoarse voice
Enlarged thyroid gland

PATIENT CARE

Refer any patient with hypothyroidism to a hospital for further evaluation. Do not attempt to treat a patient with this condition.

HYPERTHYROIDISM

SYMPTOMS

Nervousness, restlessness, and irritability
Large appetite but loss of weight
Large swelling in front of neck
Abnormal sensitivity to heat
Frequent, loose stools

SIGNS

Enlarged thyroid gland
Bulging, staring eyes
Fine tremors of the hands
Moist skin
Fine, silky hair
Resting pulse rate above eighty beats per minute

PATIENT CARE

Refer any patient with hyperthyroidism to a hospital for further evaluation. Do not attempt to treat a patient with this condition.

Other Medical Problems

HEADACHE

SYMPTOMS

Migraine Headache
Rapid onset within a few minutes to one-half hour
Usually affects one entire side of the head
Intense, throbbing pain
Nausea and vomiting
Abnormal sensitivity to light
Inability to carry out normal activities

Tension Headache

History of recent stressful situation
Gradual onset over several hours
Tight band of throbbing pain around head
Pain at base of neck

SIGNS

No physical signs

PATIENT CARE

Examine the patient to rule out the other conditions that can cause headaches. Check the patient's temperature and blood pressure. Note any chills or unusual fever pattern. Examine his ears, nose, and throat. Tap over his sinuses, and note any tenderness or discharge. Examine his eyes for evidence of inflammation. Examine his teeth. Check for abscesses and tenderness.

Examine the patient's neck for muscle spasms and neck stiffness.

Migraine Headache

- a. Tell the patient that at the first suggestion of a migraine attack he should sit quietly in a darkened, quiet room and relax completely. Relaxing in a quiet, dark room will help to relieve the migraine attack. It will also help to make the drug more effective.
- b. Tell the patient to take one tablet of ergotamine tartrate and caffeine every thirty minutes until he has taken a total of three tablets or has developed side effects such as nausea and vomiting.
- c. Warn the patient that ergotamine is a very powerful drug and can cause side effects. Warn him to keep the drug out of the reach of children.
- d. If ergotamine does not prevent the patient's headaches or reduce their severity, tell him to stop using it. Refer the patient to a hospital for further evaluation and treatment.

Tension Headache

- a. Encourage the patient to think about the sources of tension in his life and to find ways to reduce the tension. Support him in whatever way you can.
- b. Explain to the patient the relationship between these tensions and his recurrent headaches.
- c. Tell the patient to take 600 mg of aspirin every four hours for relief of pain.

on his back and propped up in a partially seated position. Tell the patient's family to change his position every hour so that he does not develop ulcers on his buttocks or back.

- h. Use a rubber suction bulb to keep the mucus sucked out of the patient's nose and throat. This will help him to breathe. It will also help to prevent chest infection.
- c. If the patient cannot chew food, show the family how to prepare soft or liquid foods.
- d. If the patient is unable to swallow, start an intravenous infusion. Give the patient 1000 ml of 5% dextrose in water and 1000 ml of normal saline or Ringer's lactate every twenty-four hours.
- e. If the patient is unconscious or convulsing, transfer him to the hospital as quickly as possible.
- f. After several hours to days, the patient will have suffered the maximum amount of damage to his brain. If he has survived, you must work with him and with his family to help him regain some function. This process is called rehabilitation. Seek guidance from your supervisor or hospital in working with the patient during this period.

PREVENTION

Look for and treat any patient with high blood pressure. More than anything else that you can do, this will reduce the frequency of strokes.

STROKE

SYMPTOMS

- Sudden onset of headache, vomiting, dizziness, and confusion
- Loss of consciousness
- Weakness of arm, leg, or face
- Sudden difficulty in speaking or in moving an arm or leg
- Possible history of high blood pressure

SIGNS

- Paralysis of arm, leg, or face on one side
- Difficulty in speaking
- With loss of consciousness, deep breathing

PATIENT CARE

- a. The patient will be most comfortable lying

GRAND MAL EPILEPSY

SYMPTOMS

- Possible warning, called an aura, before attack
- Sudden loss of consciousness
- Rhythmic jerking of arms, legs, and head
- Possible urination and passing of stool
- Possible biting of tongue or cheek
- Difficulty waking
- Confusion and no memory of attack
- History of similar attacks

SIGNS

- Usually no signs unless you witness the seizure

PATIENT CARE

- a. Help the patient's family learn how to protect him from injury during a seizure. Teach them to lay the patient on his side so that he will not choke. Tell them to allow the patient to jerk back and forth while they gently restrain his arms and legs.
- b. Whenever a person has a seizure for the first time, you must suspect that he has a brain infection. Examine him for evidence of fever and stiff neck. If you are not sure about the problem, treat him as a patient with meningitis. If the patient continues to have one seizure after another, you must stop the seizures by giving the patient 10 mg of diazepam IV. Repeat this dosage after twenty minutes, and then give a third dose, if necessary. If diazepam is not available, give the patient 300 mg to 1000 mg of amobarbital IV very slowly over a five minute period. Start with the smaller dose. If you cannot inject the drug intravenously, give it intramuscularly. The intramuscular injection will take longer to have an effect. Give children 3 mg to 12 mg of amobarbital per kg of body weight as a single dose IV or IM.
- c. If the patient has a history of convulsions, start him on a drug that will prevent further attacks. Tell him to take 100 mg of phenytoin every evening. After one week, increase the dosage to 200 mg. Continue to increase the dosage each week if the patient continues to have seizures. But do not increase the dosage beyond 600 mg daily.
- d. If a maximum dose of phenytoin does not control the seizures, begin giving the patient 60 mg of oral phenobarbital each evening. Gradually increase this dosage to a maximum of 360 mg. Do not give more than is required to prevent seizures. Give children 3 mg to 5 mg per kg of body weight at bedtime. Increase the dosage each week until seizures have stopped or the patient develops side effects.
- e. If you cannot control the seizures with these medications, refer the patient to a hospital for further care and evaluation.
- f. Carefully instruct the patient to continue taking these drugs each day. Warn him that if he suddenly stops taking the drugs, he will probably have more seizures. If he has had not seizures for three to five years, you may advise him to carefully and slowly cut the dosage of drugs, week by week, over a one-year period. However, if the patient has another seizure, he must continue to take the drug.
- g. Young children who suddenly have a convulsion may be suffering from meningitis. If they have not had previous attacks, or if they have a fever, you must consider the possibility of meningitis. Treat the patient for meningitis if you suspect that it has caused the convulsion. Refer the patient to a hospital immediately.

PETIT MAL EPILEPSY
SYMPTOMS

- Patient suddenly stops what he is doing or saying, stares blankly for several seconds, then begins again as if nothing has happened
- Patient may have many attacks every day without knowing or remembering
- No jerky movements
- During attack, patient is unresponsive

SIGNS

- Physical examination does not reveal any signs
- Patient may also suffer from grand mal epilepsy

PATIENT CARE

- a. When you suspect petit mal epilepsy, refer the patient to a hospital for further evaluation.
- b. 250 mg/5 ml ethosuximide elixir is an effective drug for petit mal epilepsy. If the patient is under six years of age, begin with 125 mg (2.5 ml) twice a day. For patients six years of age and older, begin with 250 mg (5 ml) in the morning and at night. Gradually increase the dose each week by 125 mg a day in patients under six years of age. Increase the dose of patients six years of age and older by 250 mg a day each week. The usual maximum dose for patients under six years of age is 1000 mg (20 ml) a day. Patients six years of age and older may require up to 1500 mg (30 ml) a day.

- c. Ethosuximide can cause nausea, vomiting, and drowsiness. If these symptoms develop, reduce the dosage.
- d. If the attacks continue, refer the patient to the hospital again for further evaluation.

ANEMIA

SYMPTOMS

Weakness, tiredness, fainting

Easily winded

Patient most often either an infant with low birth weight, a pregnant woman, or a woman with heavy menstrual periods

Patient may have hookworms, peptic ulcer, cirrhosis, malaria, or sickle cell disease

SIGNS

Pale or white nail beds, conjunctivae, and mucous membranes of mouth

PATIENT CARE

- a. If the patient has become anemic very rapidly from bleeding, transfer him quickly to a hospital. Begin an intravenous infusion with normal saline solution before you transfer him. He will develop shock if the bleeding has been severe.
- b. Give the patient iron in either tablet or liquid form of ferrous sulfate. Give children who cannot swallow pills the liquid preparation. The drug works better if the patient takes it between meals. But it may irritate his stomach. If the patient takes the drug at meal times, it will cause less stomach irritation. Use the following dosages:

Adults	300 mg	three times a day
Children		
six to twelve	300 mg	twice a day
one to six	150 mg	twice a day
under one year	60 mg	three times a day

- c. Find the cause of the patient's anemia and treat that also. Otherwise, the anemia will occur again.

PREVENTION

- a. Give women who are pregnant or breast-feeding 300 mg of ferrous sulfate daily. This will provide the extra iron that their bodies need.

- b. Give infants who were born before nine months, or who weigh less than 2 kg at birth, a liquid preparation of iron. Give approximately 60 mg of liquid ferrous sulfate daily for at least three months.
- c. Encourage families to eat iron-rich foods regularly. These foods include leafy green vegetables, molasses, red meat, liver, and eggs.

CANCER

SYMPTOMS

Skin sores or lesions that do not heal

Hard lumps or masses anywhere in the body

Breast lumps

Large liver or spleen or other hard mass in the abdomen

Unexplained blood in urine

Bleeding after intercourse, between menstrual periods, or after menopause

Blood in the stool or unexplained bleeding from the rectum

Unexplained loss of weight or appetite

SIGNS

Weight loss

Enlarged, hard lymph glands

Enlarged liver and spleen

Hard, rapidly growing mass in the abdomen, rectum, or uterus

Breast lumps, dimpling, or discharge from nipples

Skin lesions that do not heal

PATIENT CARE

- a. When you suspect that the patient has cancer, refer him to a hospital.
- b. When the cancer cannot be cured or controlled, help to keep the patient comfortable. This may require strong pain medications such as morphine.
- c. Help the family to provide the patient with a diet that he can digest. They may have to chop the food and give it to the patient in a more liquid form when he has little appetite or willingness to eat.
- d. Treat the patient for infections that may occur during the course of his cancer. Look for signs of pneumonia, urinary tract infections, and infections in other sites.

DIABETES MELLITUS

SYMPTOMS

- Increased thirst
- Passing of large amounts of urine
- Weight loss in spite of large appetite
- Possible history of severe bacterial infection of skin, urinary tract, or lungs

SIGNS

- Possible overweight or obesity
- Sugar in urine

PATIENT CARE

- a. If the patient is overweight, help him to lose weight. Advise the patient to reduce the total amount of food, or calories, that he is eating. Encourage diabetic patients to avoid foods that contain processed sugar. Encourage them to eat fresh fruits and vegetables, and foods that are good sources of protein, such as lentils, fish, meat, eggs, and milk.
Find out when the patient usually eats. Help him to space his meals throughout the day. Small frequent meals are better than one or two large meals.
- b. If the patient does not exercise regularly, he will have difficulty losing weight. Encourage him to develop a daily pattern that includes exercise.
- c. The hospital staff will advise the patient about whether he must receive insulin or another type of sugar-lowering agent. If the patient must receive insulin, be certain that he has the supplies that he requires. Observe him while he prepares and administers his insulin. Make sure that he carries out these procedures properly so that he will not suffer from complications such as infection at the site of injection. See Patient Care Procedure for Teaching a Patient How to Give Himself an Insulin Injection.

COMPLICATIONS

- a. If the patient develops the signs and symptoms of ketoacidosis, start an intravenous infusion with Ringer's lactate or normal saline. Refer him to a hospital as quickly as possible.
- b. If the patient is taking a blood sugar-lowering agent by mouth or by injection,

teach him the symptoms of low blood sugar. Teach him how to treat himself by drinking a sugar solution. If a patient is in a coma caused by low blood sugar, then 20 cc of 50% glucose intravenously will wake him up. Always suspect low blood sugar when you encounter a patient who cannot be aroused.

- c. Treat any infection by bacteria or fungus with the appropriate medication.
- d. Diabetic patients have a great risk of injury to their feet. Teach the patient to keep his feet clean and dry. Teach him to inspect his feet daily and to treat all cuts or lacerations promptly. Tell him he must wear shoes at all times. If you see any evidence of foot infection, treat the infection with antibiotics and warm water soaks four times a day until the infection is cleared up.

FOLLOW-UP OF DIABETIC PATIENTS

- a. Check the patient's weight at each visit.
- b. Review his diet, especially if he is overweight and he is not successful in bringing his weight down.
- c. Find out what kind and how much exercise the patient takes daily. Encourage him to develop regular exercise patterns.
- d. Ask about frequency of urination, hunger, and thirst. These are symptoms of poorly controlled diabetes.
- e. If the patient has sugar in his urine, his diabetes is not under good control. Refer him to a hospital for further help. Use indicator paper to test the patient's urine for sugar. Follow the instructions that come with the indicator paper.

Mental Health and Alcohol Abuse Problems

ACUTE CONFUSION

SYMPTOMS

Does not know where he is, who he is, or what day or time of day it is

SIGNS

Looks lost and disturbed

142

PATIENT CARE

- a. Perform a careful medical history and physical examination to attempt to determine the cause for the acute confusion. Suspect a severe bacterial infection, malaria, alcohol, or other type of poisoning.
- b. Place the patient in a quiet room. Ask one or two close relatives to care for him. Keep other people and noises out.
- c. Be careful that the patient consumes enough water and food to avoid thirst and starvation.
- d. If the patient appears anxious or excited, give him 50 mg chlorpromazine IM or by mouth every eight hours. Increase the dosage as required to control anxiety and agitation.

ANXIETY

SYMPTOMS

Sudden loss of breath
Sudden unexplained fear of death
Pounding of the heart
Tiredness and irritability
Suddenly feels large lump in throat

SIGNS

Restlessness, fear, and distraction
Increased pulse rate
Possible increased blood pressure

PATIENT CARE

- a. Always examine the patient carefully to be certain that he does not have a serious physical illness causing his symptoms.
- b. Explain the anxiety to the patient and his family. Help them to identify possible causes for the anxiety. Help them to find ways of handling these problems.

DEPRESSION

SYMPTOMS

Inability to sleep at night
Poor appetite and weight loss
Loss of interest in life
Possible thoughts about killing himself

Frequent headaches and irritability
Inability to concentrate on his work

SIGNS

Unhappiness, distress, and distraction
Responds slowly to questions
May not answer questions intelligently

PATIENT CARE

- a. Discuss the patient's depression with his family. Explain to them that he needs a great deal of support and comfort. Encourage them to be patient and loving.
- b. If the patient has thoughts about killing himself, or has attempted it, instruct the family to stay with the patient. This is especially important at night.
- c. If the depression is severe, or the patient's mental state is not normal, refer him to a hospital. He requires treatment with anti-depressant drugs.

ACUTE ALCOHOL INTOXICATION

SYMPTOMS

Unconscious or difficult to arouse

SIGNS

Strong odor of alcohol on breath
Slurred speech
Unsteady walk, staggering
Possibly violent, aggressive, loud, or drowsy

PATIENT CARE

- a. Prevent the patient from drinking any more alcohol. Allow him to sleep.
- b. Prevent the patient from harming himself or others while he remains intoxicated.

CHRONIC ALCOHOLISM

SYMPTOMS

Denies that alcoholism is a problem
Insists that he can stop drinking whenever he wants to
History of frequent intoxication
Poor appetite, nausea, and vomiting

OTHER COMMON PROBLEMS

SIGNS

Weight loss and poor nutrition

Possible tenderness in the upper abdominal area

Enlarged liver, jaundice, other signs of cirrhosis

PATIENT CARE

- a. Help the patient to recognize that his drinking represents a serious medical problem that must be treated.
- b. With the patient and his family, work out

steps that they can take to help the patient stop drinking alcohol. The best results occur when patients with chronic alcoholism meet together to support each other in staying away from alcohol. Help him recognize that complete abstinence from alcohol consumption is the only treatment for his problem.

- c. Encourage the patient and his family to improve the patient's diet. Patients with chronic alcoholism are often poorly nourished.

TRAUMA AND EMERGENCY

Shock and Unconsciousness

SHOCK

SYMPTOMS

Weakness
Anxiety
Fear of dying
Abnormal thirst
Shortness of breath

SIGNS

Shock Caused by Severe Bleeding, Fluid Loss, Infection, or Severe Heart Failure

Restlessness and anxiety
Shallow, rapid respirations
Weak, rapid pulse
Low blood pressure
Cold, clammy skin
Pale skin, blue lips, and nail beds
Possible unconsciousness

Anaphylactic Shock Caused by Drugs or Stings

Large red welts on skin
Swelling of face and lips
Severe wheezing and trouble breathing
Cyanosis

PATIENT CARE

Shock Caused by Severe Bleeding, Fluid Loss, Infection, or Severe Heart Failure

- Check the patient's airway and make certain that it is clear. Begin mouth-to-mouth resuscitation if breathing has stopped.
- Stop severe bleeding by direct pressure.
- Position the patient so that his feet are about 20 cm higher than the rest of his body.
- Prevent movement of any fracture of large bone or spine to reduce further bleeding into tissues.
- Place blankets over and under the patient to keep him warm.
- If the patient is in shock from severe heart failure or myocardial infarction, do not give him intravenous fluids.

If the patient is in shock from severe bleeding or fluid loss, begin an intravenous infusion with the largest needle that you have. Run normal saline into the patient at a rapid rate. Alternatively, use Ringer's lactate. See Patient Care Procedures for Starting an Intravenous Solution in a Peripheral Vein and for Giving Intravenous Fluids.

If the patient is in shock because of severe infection, remember that he has not lost a large amount of fluid or blood. Be very careful not to run the IV solution rapidly, or you can easily make his condition worse by giving him too much fluid.

- Record the patient's pulse and blood pressure every fifteen minutes.
- Transfer the patient to a hospital as rapidly as possible. If the patient has lost a lot of blood, take several relatives with him who can donate blood.
- If the patient is in shock because of a severe infection, give him 600 mg of benzylpenicillin G IV every four hours. Also give him 500 mg of streptomycin IM every twelve hours.

Anaphylactic Shock Caused by Drugs or Stings

Some patients may be very allergic to certain drugs or animal poisons, especially bee stings. Within a few minutes of receiving the drug, or the insect or animal sting, the patient may become very anxious and short of breath. He may begin to choke and become blue. His skin may become cold and clammy. He may have swelling around his eyes or other parts of his body. These signs can quickly progress to unconsciousness and coma. Without treatment, the patient can die in as short a time as ten to fifteen minutes.

You must keep epinephrine and a small syringe and needle on hand at all times at the health center. Do not administer antibiotics unless you have these supplies ready to use. If the patient suddenly develops the symptoms and signs of anaphylactic shock, carry out the following procedures.

145

- a. Place the patient flat on his back with his feet elevated about one-half meter above the level of his head. Loosen his collar and make certain that his airway is open.
- b. Give the patient an injection of 1:1000 solution of epinephrine SC. Use the following dosages:

Adults and children 40 kg and over	0.5 cc
Children 20 to 40 kg	0.3 cc
10 to 20 kg	0.2 cc
Under 10 kg	0.1 cc
- c. Record the patient's pulse, respiratory rate, and blood pressure every five minutes.
- d. If possible, begin an intravenous infusion of normal saline solution as soon as you have given the patient epinephrine.
- e. If the signs of shock continue, give the patient a second injection of epinephrine in five to ten minutes. Follow this with further injections as necessary. Use the same dosage of epinephrine as the first injection.
- f. If the patient has swelling and itching of the skin, give him 10 mg of chlorpheniramine IM. Give children 0.5 mg per kg of estimated body weight, up to a maximum dosage of 10 mg.
- g. If signs of shock continue for more than thirty minutes, transfer the patient to a hospital as quickly as possible. Accompany him to the hospital so that you can continue to monitor his vital signs and give him epinephrine as required.

UNCONSCIOUSNESS

SYMPTOMS

Unconsciousness may be caused by any of the following conditions:

- Meningitis
- Cerebral malaria
- Epilepsy
- Stroke
- Trauma to the head
- Acute alcohol intoxication
- Severe liver disease
- Poisoning
- Shock
- Low blood sugar or ketoacidosis in a diabetic patient

SIGNS

- Patient will not respond when you try to arouse him
- Signs vary according to the cause of the unconsciousness
 - Meningitis—stiff neck or, in young infant, bulging fontanelle
 - Septic shock, cerebral malaria, meningitis—high fever
 - Acute alcoholic intoxication—odor of alcohol or acetone on the breath
 - Shock—weak, rapid pulse; low blood pressure; cold, clammy, pale skin; blue lips and nailbeds; dehydration
 - Head trauma, stroke—pupils unequal in size, or unresponsive to light, or very small or very large
 - Hepatitis, cirrhosis—jaundice or enlarged liver
 - Poisoning—very shallow respiration
 - Diabetic ketoacidosis—deep, rapid respirations

PATIENT CARE

- a. Check the patient's airway and make certain that it is clear. Begin mouth-to-mouth resuscitation if he is not breathing.
- b. Place the patient in the recovery position so that he will not choke if he begins to vomit.
- c. If the patient has been in an accident, and has a possible neck or back injury, do not move him until you have splinted him. See Patient Care Procedure for Placing a Patient with a Possible Fracture of the Spinal Column on a Blanket.
- d. Stop any severe bleeding.
- e. Assess the patient carefully for possible causes for his unconsciousness, and treat him accordingly.

Blocked Airway, Acute Respiratory Failure, Snake Bite, Poisoning

BLOCKED AIRWAY

SYMPTOMS

- Inability to breathe in
- Extreme anxiety

146

SIGNS

Gagging and choking
Cyanosis or pallor
Possible unconsciousness with no breathing at all

PATIENT CARE

- a. Strike the patient vigorously on his back to help remove a foreign object from his upper airway. If the patient is a child, hold him with his head down, and then strike him on the back.
- b. If back blows do not relieve the obstruction, use manual thrusts. See Patient Care Procedure for Using Manual Thrusts to Clear an Adult's Blocked Airway.
- c. If manual thrusts also fail to relieve the obstruction, open the patient's mouth with the fingers of one hand. Reach into the back of his throat with your other hand. Attempt to feel any foreign body and pull it out of his throat.
- d. If these procedures fail to relieve the patient, begin mouth-to-mouth resuscitation. Watch the patient's chest as you blow to determine if air enters his lungs. If air is not entering his lungs, repeat the manual thrusts. Then resume mouth-to-mouth resuscitation.
- e. If swollen tissue from an infection is blocking the patient's airway, transfer him to a hospital as quickly as possible.

PREVENTION

Discuss with community members the dangers of airway obstruction. Demonstrate the methods that will relieve the obstruction. Most acute obstructions will occur in the home. Treatment must occur there to be successful.

ACUTE RESPIRATORY FAILURE

SYMPTOMS

Any of the following conditions may cause acute respiratory failure

- Drowning
- Poisoning
- Electric shock
- Trauma to the head
- Lack of oxygen
- Carbon monoxide poisoning

SIGNS

Little or no breathing
Very little movement of chest or abdomen
Unconsciousness
No detectable movement of air through nose or mouth
Blue or pale skin

PATIENT CARE

- a. When the patient is not breathing, begin mouth-to-mouth resuscitation immediately. Position the head so that the tongue does not block the airway.
- b. Note whether the chest rises when you blow into the lungs. If the chest does not rise, treat the patient for upper respiratory obstruction. See Patient Care Procedure for Removing a Foreign Body from a Person's Throat with Your Fingers.
- c. When the airway is clear and the patient is getting air into his lungs, check the carotid pulse. If you feel no pulse, use your fist to pound on the lower left side of the sternum several times. Recheck the carotid pulse and continue mouth-to-mouth resuscitation. If the patient is not breathing after fifteen minutes, and has no pulse, stop your efforts.

SNAKE BITE

SYMPTOMS

Pain at the site of snake bite
Difficulty talking or swallowing
Difficulty breathing
Blood in the urine or bleeding into skin or elsewhere in body

SIGNS

Fang marks at site of snake bite
Swelling and discoloration around snake bite
Drooping of eyelids or difficulty swallowing, talking, or breathing
Bleeding from gums or into skin or into urine

PATIENT CARE

- a. Calm the patient and insist that he lie down quietly.
- b. Clean the snake bite with soap and water. Dress it lightly.

- c. Splint a bitten arm or leg to prevent movement.
- d. Apply a tourniquet of wide cloth between the snake bite and heart. Tighten the tourniquet enough to prevent the flow of blood back to the heart. Make sure that pulses are present below the tourniquet.
- e. If snake antivenom is available at a hospital within six to twelve hours travel time, and local signs of poisonous snake bite are present, transfer the patient to a hospital. Snake antivenom is the only specific treatment that slows down the poisoning of the body by the venom.
- f. Do not permit the patient to drink alcohol or stimulants such as coffee and tea. These substances increase the absorption of the snake venom into the blood stream. Do not give the patient aspirin or sedatives. They may increase the effects of the venom
- g. If the patient has been immunized previously, give him 0.5 cc of tetanus toxoid IM. If he has not been immunized, he will require tetanus antitoxin. Refer him to a hospital for this treatment.

PREVENTION

- a. Tell community members about the most important first aid steps for snake bites. Tell them to keep the victim calm and lying down. Tell them to carry him, if possible. If he must walk, tell him to walk slowly and rest frequently, to slow down the absorption of poison into his body. Tell them to splint a bitten arm or leg to reduce movement. Tell them to bring the patient to the health center as quickly as possible.
- b. Encourage workers to wear long pants and high-topped boots when they are working in snake-infested areas.
- c. Tell children that they must not play in high grass or areas where snakes may live.

POISONING

SYMPTOMS

Trouble breathing
 Blurred vision, dizziness, weakness
 Nausea and vomiting
 Severe pain in mouth, throat, chest, and stomach

Convulsions, unconsciousness
 Possible history of
 attempted suicide
 work with insecticides
 work with petroleum products
 recent eating or drinking of anything with a bad or unusual taste

SIGNS

Unconsciousness
 Respiratory failure
 Shock
 Burns on lips, mouth, or throat
 Petroleum smell on breath
 Sweating and salivation
 Twitching muscles
 Constricted pupils that do not react to light

PATIENT CARE

- a. First check the patient's vital signs. If he is not breathing, give him mouth-to-mouth resuscitation. If he is suffering shock, start an intravenous infusion. Use normal saline solution.
- b. Attempt to find out the type and amount of poison the patient consumed and the time he consumed it. Give further treatment according to the type of poison.

If you suspect that the patient has swallowed less than two mouthfuls of a petroleum product, do not pass a nasogastric tube. If he has swallowed a larger amount, pass the tube into the stomach and flush out the stomach with two to three liters of water. See Patient Care Procedure for Passing a Nasogastric Tube.

If the patient has insecticide poisoning, pass a nasogastric tube into his stomach, and flush out his stomach with two to three liters of water. If the poison got onto his clothes, remove his clothing. Give adults 2 mg of atropine IV or IM every five to ten minutes until the symptoms are gone or the patient's pupils dilate and he develops a very dry mouth. Give children 0.05 mg of atropine per kg of body weight.

If the patient has swallowed a caustic substance such as lye or acid, give him milk or any other liquid in order to dilute the poison. Do not make the patient vomit.

To treat all other poisons, encourage vomiting. Give the patient ipecac syrup immedi-

14A

ately. Give adults four to six teaspoons followed by two glasses of water. Give children three teaspoons, followed by a glass of water. Repeat the dosage in fifteen minutes if the patient has not vomited. Or put two tablespoons of salt in half a glass of water and have the patient drink it. Or pass a nasogastric tube into your patient's stomach. Flush the stomach out with two to three liters of water.

- c. If the patient still has any signs of poisoning, transfer him to a hospital as quickly as possible.

PREVENTION

- a. Visit the patient's home. Help the family to label fuel bottles and store them out of reach of children. Throw away old drugs. Point out hazards, and make suggestions about how to reduce the risk of poisoning.
- b. Work with the community to reduce the risk of poisonings in the home. Show community members how to prevent poisonings in their homes.

is spurting out, put direct pressure on the wound with your fingers. Do not wait for clean dressings or other supplies.

- b. After controlling arterial bleeding, and before controlling less severe bleeding, check the patient's airway and his pulse and respirations. If necessary, clear the airway and begin mouth-to-mouth respiration.
- c. Begin treatment for shock if bleeding has been severe or patient has lost more than an estimated 200 ml of blood.
- d. Apply a pressure dressing to the wound. Follow Patient Care Procedure for Applying a Pressure Dressing.
- e. If you cannot control bleeding with direct pressure, apply a tourniquet. Follow Patient Care Procedure for Using a Tourniquet to Control Breathing.

PREVENTION

Teach the community that severe bleeding leads rapidly to shock and death. Tell community members that they must stop severe bleeding immediately by using direct pressure on the wound. Demonstrate the technique of applying direct pressure.

Bleeding and Lacerations

BLEEDING

SYMPTOMS

- History of injury that has cut blood vessels or broken bones
- Increasing pain in the abdomen following injury
- History of chest pain or coughing up blood following injury
- Symptoms of shock, if rapid loss of blood

SIGNS

- Bright red blood that spurts from an artery
- Dark red blood that flows more slowly or oozes from a vein
- Signs of shock without evidence of external bleeding may be caused by internal bleeding

PATIENT CARE

- a. If the patient is losing a large amount of blood through a wound, and bright red blood

LACERATIONS

SYMPTOMS

- Deep wound, infected wound, wound from animal or human bite
- Pain
- Loss of blood
- Loss of function caused by damage to nerve or muscle

SIGNS

- Internal bleeding in deep cuts and punctures of the chest, abdomen, and groin
- Tendon damage
- Nerve damage
- Arterial blood vessel damage
- Tissue damage

PATIENT CARE

- a. Examine patient for signs of shock. Begin treatment for shock if the patient has lost more than 200 ml of blood.
- b. To treat small lacerations without tendon,

149

nerve, or artery damage, scrub with soap and water. Follow Patient Care Procedure for Cleaning Lacerations. Remove any dead tissue. Follow Patient Care Procedure for Removing Dead Tissue from a Wound. Trim off any jagged or rough edges of the wound. Apply a dressing or butterfly bandage if the wound is less than 1 cm long on the face, or 2 cm long elsewhere on the body, and does not cross a joint. Suture larger wounds, or wounds that become pulled apart on movement of a joint. If the wound is more than twelve hours old, or you see evidence of infection, do not suture the wound. Apply a clean dressing, and bandage the wound. Tell the patient to soak the wound in clean warm water four times a day, until the wound has a clean, dry crust covering it.

- c. Treat larger wounds, or wounds that involve tendons, nerves, or larger blood vessels, as follows. If someone has already applied a pressure dressing to stop bleeding, transfer the patient to a hospital without further inspection. If the wound is fresh, or it is not properly dressed, expose it. If bleeding is controlled, then scrub the wound with soap solution and water. Irrigate the wound with sterile water or salt solution for ten to fifteen minutes. Flush all parts of the wound repeatedly. Then put a dressing over the wound and bandage it. Transfer the patient to a hospital.
- d. If the wound is more than twelve hours old and does not involve tendon, nerve, or large blood vessels, give the patient 600 mg of procaine penicillin G IM and tell him to take a 250 mg oral penicillin V tablet every six hours for five days. If he is allergic to penicillin, substitute 125 mg of erythromycin every six hours for five days. Even if the wound is more than twelve hours old and involves tendon, nerve, or large blood vessels, after starting antibiotic treatment, transfer the patient to a hospital.
- e. Protect the patient against tetanus. If he has had tetanus shots before, give him tetanus toxoid. If he has not been immunized before, begin a series of tetanus shots.

Transfer the patient to a hospital if his laceration is a puncture, is very large, or is in-

fectured and the patient has no history of tetanus immunization.

Human Bite

- a. Scrub the wound with soap and water.
- b. Cut out any crushed tissue or tissue that does not appear to be alive. Follow Patient Care Procedure for Removing Dead Tissue from a Wound.
- c. Do not suture the wound. It must heal without closure. Tell the patient to soak the wound in warm, clean water for thirty minutes four times a day.
- d. Give the patient a 0.5 ml tetanus toxoid injection IM. Repeat the injection in six weeks if the patient has not had tetanus toxoid previously.
- e. Give a patient with a human bite an oral antibiotic such as 500 mg of ampicillin every six hours for five days.

Animal Bite

- a. Suspect a risk of rabies if the bite is from any wild animal, especially if the attack was unprovoked; if the animal that bit the patient has been killed or has escaped; if the animal that bit the patient becomes sick or dies within ten days; or if the animal bit the patient in the head or neck.
- b. Note whether the bite marks are on face and neck, body, or arms and legs. Note the depth and severity of bites.
- c. Scrub the wound with soap and water.
- d. Cut out any tissue that has been injured or is pale or discolored. Follow Patient Care Procedure for Removing Dead Tissue from a Wound.
- e. Irrigate the wound with sterile salt solution for fifteen minutes. Irrigate all parts of the wound.
- f. Do not suture an animal bite.
- g. Refer any patient with a risk of rabies to a hospital immediately.
- h. Give the patient 0.5 ml of tetanus toxoid IM. Repeat this injection after one month and again after two months if the patient has not had tetanus toxoid previously.

Fractures, Sprains, Dislocations, and Burns

FRACTURES

SYMPTOMS

Recent history of accident
Possible snapping sound
Sudden onset of pain
Inability to move injured limb

SIGNS

Deformity around injury
Swelling over fracture site
Tenderness over fracture site
Legs of unequal length in hip fracture
Bone visible in wound or protruding from
wound in open fracture

PATIENT CARE

- a. If the patient is an accident victim, assess him for airway obstruction, breathing difficulty, and possible shock before you give further care. Stop any severe bleeding.
- b. If you suspect a possible fracture of the spine, do not move the patient until you have assessed him for this injury. If fracture of the spine is possible, splint the patient where he is before you move him.
- c. When an open fracture is present, do not attempt to replace a protruding bone. Cover the injury with a clean dressing and apply a pressure bandage.
- d. Splint any fracture you identify. Follow the Patient Care Procedures for splinting individual bones.
- e. Transfer the patient to a hospital for further evaluation and care. Choose the least bumpy means of transport, even if it is slower. Speed is usually less important than comfort.
- f. If the patient in severe pain, give him 50 mg to 100 mg of pethidine IM every four to six hours. Give children 1 mg to 2 mg per kg of body weight.

SPRAINS

SYMPTOMS

Sudden twisting of joint
Pain and swelling of injured joint
Pain with movement of injured joint

SIGNS

Swelling and tenderness around joint
Possible black and blue discoloration of skin,
in case of severe sprain
Possible associated fracture

PATIENT CARE

- a. Tell the patient to keep the joint slightly elevated for the first twenty-four hours. Tell him to apply ice packs to the joint. Elevation and ice packs will keep swelling to minimum.
- b. Apply a firm elastic bandage. When the ankle is affected, begin wrapping the ankle joint at the toes.
- c. If the swelling and pain are severe, refer the patient to a hospital. A walking cast is the preferred treatment for an ankle sprain. This injury requires from six to eight weeks for healing.
- d. Give the patient aspirin for pain relief.

DISLOCATIONS

SYMPTOMS

Severe pain in joint
Pain with movement of affected joint
Inability to move affected limb

SIGNS

Deformity
Tenderness
Limitation of motion in joint
Possible fracture

PATIENT CARE

- a. For shoulder discoloration, follow Patient Care Procedure for Restoring a Dislocated Shoulder.

- b. For dislocation of the jaw, wrap both thumbs with gauze to protect them. Then insert the thumbs in the patient's mouth and press down firmly against the lower back teeth, while lifting the front of the jaw with your fingers. After you have reduced the dislocation, or if you are unable to reduce the dislocation, refer the patient to a hospital.
- c. For other dislocations, refer the patient to a hospital after splinting the involved joint.
- d. Give the patient aspirin for pain relief. For more severe pain, give him 50 mg to 100 mg of pethidine IM. Give children 1 mg to 2 mg per kg of body weight.

BURNS

	FREQUENT CAUSES	SYMPTOMS	SIGNS
First degree	Sun, low intensity flash	Increased sensitivity of skin	Red skin, blanches on pressure
Second degree	Scalds, flash flame	Very painful to touch	Blistered, mottled, red skin, broken surface with weeping
Third degree	Fire	Relatively less painful than second degree Signs of shock	Dry, pale white or charred skin Fat exposed through broken skin

PATIENT CARE

First Degree Burns

- a. Immerse the burn in cool water, or apply cool compresses.
- b. Cover the burn with a dry dressing if the burn is in an area that is difficult to keep clean.
- c. Give the patient aspirin for pain relief.

Second Degree Burns

- a. Do not break blisters or attempt to clean skin with soap and water. Do not apply ointments or other substances to the burn. They will increase the risk of infection. Cut away loose tissue and broken blisters with clean forceps and scissors.
- b. Cover the burn with dry, clean dressings such as a freshly ironed sheet or other type of linen.
- c. If possible, keep the burned area elevated above heart level. This will help to reduce fluid loss into the tissues.
- d. Give the patient aspirin for relief of pain. For more severe pain, give the patient 100 mg of pethidine IM. Give 2 mg per kg of body weight in a child. Repeat the dosage after four to six hours.
- e. If the patient has suffered smoke inhalation, transfer him to a hospital immediately. Transfer him immediately if second degree

burns affect more than 10% of his body surface, or 5% if the patient is a child.

- f. Encourage the patient to take fluids by mouth. In more severe burns, replace with Ringer's lactate or normal saline solution IV the fluid that is lost into the burn. Give a volume of fluid equal to your patient's weight multiplied by the percent of his body burned. Then add 500 ml for an adult and 250 ml for a child. Give this quantity of fluid within eight hours.
- g. Give the patient 0.5 ml of tetanus toxoid IM.
- h. Give the patient 400 mg of procaine penicillin G IM.

Third Degree Burns

- a. If the patient has inhaled smoke and hot fumes, transfer him to a hospital immediately. He may develop obstruction of his upper airway very rapidly and die unless he receives an artificial airway.
- b. Transfer patients with any third degree burns to a hospital as quickly as possible. Third degree burns require skin grafting to prevent scarring and deformity. Remember that second and third degree burns are often impossible to differentiate for the first several days after they occur. Therefore, transfer the patient to a hospital if you suspect that he has suffered a third degree burn of the face, genitals, or hands, or if the burn extends across any joint.

12

- c. Severe burns cause patients to lose fluid rapidly into the tissues under the burn. You must replace fluid to prevent shock. Start an intravenous infusion immediately. Give the patient either Ringer's lactate or normal saline. Calculate the amount to give the patient over the first eight hours by multiplying the patient's body weight by the percent of his body burned. Then add 500 ml for adults and 250 ml for children.
- d. Apply a dressing directly over the burned area. Do not attempt to remove charred clothing. As a result of the heat, charred clothing represents sterile material. Do not apply ointments, lotions, or other substances to the burn.
- e. Relieve pain by giving the patient 100 mg of pethidine IM. Give a child 2 mg per kg of body weight. Repeat this dosage in four to six hours.

PREVENTION

- a. Young children suffer from burns most frequently. These burns often occur around the home. When you make home visits, inspect the kitchen area. Note whether preschool children might injure themselves in the kitchen. Discuss this danger with the parents.
- b. Whenever you treat a child for a burn, discuss with the parents the ways that the burn could have been prevented. They can often think of measures that they can take to reduce the risk of further accidents.
- c. Discuss the danger of burns with the parents of children who are beginning to crawl and walk around the house. These children have no fear of burning themselves yet. They need special protection by their parents.

Trauma to the Eye, Head, Spinal Column, Chest, and Abdomen

TRAUMA TO THE EYE

SYMPTOMS

- History of accident involving one or both eyes
- Severe pain
- Loss of vision

SIGNS

- Roughness on surface of cornea from injury or burn
- Bleeding behind cornea
- Pupils uneven, unreactive to light

PATIENT CARE

- a. If the eye has been damaged by a chemical, flush the eye with water or normal saline solution. Continue to flush the eye for at least thirty minutes. The chemical may continue to injure the eye because it sticks to the tissues.
- b. Patch both eyes. Movement of the uninjured eye will cause movement of the injured eye as well. This increases the risk of further injury.
- c. Transfer the patient to a hospital as quickly as possible. Keep him lying down. Treat him for shock, and give him aspirin for pain.

TRAUMA TO THE HEAD

SYMPTOMS

- Loss of consciousness
- Severe headache, nausea, or vomiting
- History of accident

SIGNS

- Swelling of skin over skull, or laceration with bleeding
- Depressed area, if depressed fracture
- Pink fluid from nose or ears, if fracture of base of skull
- Unconsciousness or change in mental state
- Unequal or dilated pupils
- Deformity of face, if fracture of facial bones or jaw

PATIENT CARE

- a. If the patient is unconscious, place him in the recovery position so that he will not choke on his vomit.
- b. Record the patient's pulse and respirations and mental state frequently. These are important signs of the severity of the injury.
- c. If the patient has a deep laceration of the scalp, put a dressing on it before transferring him to a hospital. Do not attempt to clean or repair deep lacerations of the scalp. For treatment of more shallow lacerations,

153

see Patient Care Procedures for Cleaning Lacerations and for Suturing Superficial Lacerations Using a Simple, Interrupted Stitch.

- d. If the patient has a fracture of the jaw or facial bones, remove any broken teeth or dentures. Support the jaw with a bandage. If the patient is conscious, let him sit and lean forward to allow drainage of blood and saliva during transfer to a hospital. Otherwise, place him in the recovery position.
- e. If the patient has been unconscious for a short while after an accident and wakes up, he has suffered from a concussion. Carefully observe him for at least forty-eight hours before you allow him to return home. If he begins to become drowsy and difficult to arouse after awakening, transfer him quickly to a hospital. His drowsiness may be a sign of bleeding inside of his head.

TRAUMA TO THE SPINAL COLUMN

SYMPTOMS

History of injury to neck or back involving falling from height, blow from heavy object across back, motor vehicle accident, diving accident

Pain in the neck or back

Numbness or weakness in body, arms, or legs

SIGNS

Inability to move fingers or toes

Inability to feel pin prick on arms or feet

PATIENT CARE

If you suspect an injury to the neck or back, do not move the patient. Prepare him for transfer to a hospital.

- a. Hold his shoulders and hips while you place a pad between his thighs, knees, and ankles.
- b. Then tie the feet and ankles together with a figure of eight knot.
- c. Tie his knees and thighs together with wide bandages made from sheets, towels, or other cloth.
- d. Obtain a wooden door or wide board that is

as long as the patient. Cover the board with a blanket.

- e. Place the board under the patient as described in the Patient Care Procedure for Placing a Patient on a Stretcher with the Help of Four People, but without Using a Blanket.
- f. Block the patient's head with pillows on either side. The pillows will prevent movement of the head from side to side.
- g. Transfer the patient as gently as possible to a hospital. Gentleness is more important than speed. Further injury to the spinal cord will occur if the spinal column is bent or twisted.

TRAUMA TO THE CHEST

SYMPTOMS

History of serious accident or injury

Severe pain in chest

Difficulty breathing

SIGNS

Tenderness over broken rib

Air sucking through penetrating chest wound wall

Frothy bubbles around wound on exhalation

Cyanosis of lips and fingernails

Uneven expansion of chest

PATIENT CARE

- a. Cover a sucking wound of chest immediately. Use your hand. Then substitute a covering that will not allow air to get in.
- b. Make certain that the patient has an open airway and is breathing. Then assess his pulse and respirations and the extent of his injuries.
- c. If one or more ribs are fractured, apply a triangular bandage to the arm on the injured side. Then bandage the arm to the chest wall. This will help to keep the chest wall stable.
- d. If the patient has a weapon or other object protruding from the chest wall, do not remove it. This may make internal bleeding worse. Bandage the wound as it is.

TRAUMA TO THE ABDOMEN

SYMPTOMS

History of blunt or sharp instrument striking abdomen
Severe pain
Nausea and vomiting
Blood in vomit and urine
Loss of consciousness
Difficulty breathing

SIGNS

Abdominal guarding and rebound tenderness
Signs of shock from blood loss or rupture of organ
Abrasions, lacerations, or puncture wound of abdomen or back

Protruding intestines from large laceration through wall of abdomen

PATIENT CARE

- a. Prepare the patient for transfer to a hospital.
- b. Start an intravenous infusion and give the patient normal saline solution.
- c. Do not attempt to replace internal organs if they are protruding through the abdominal wall. Cover the laceration with a clean dressing. Keep the dressing moist if the intestines are outside of the abdominal cavity.
- d. Give the patient 600 mg of benzylpenicillin G IV and 500 mg of streptomycin IM before transfer.

PROBLEMS OF WOMEN

Common Infections of the Female Reproductive System

PELVIC INFLAMMATORY DISEASE

SYMPTOMS

Pain in the lower abdomen
Fever and chills
Long, heavy menstruation
Nausea and vomiting
Foul-smelling vaginal discharge

SIGNS

Fever over 38°C
Tenderness with guarding in the lower abdomen
Pus in the vagina
Tenderness when the cervix is moved
Tender mass on either side of uterus

PATIENT CARE

- a. Place the patient in a semi-seated position to encourage drainage.
- b. Give her 4.8 g of procaine penicillin G IM in two different injection sites, 2.4 g in one hip and 2.4 g in the other hip. Also, give her 1 g of oral probenecid.
- c. Follow the IM penicillin with 500 mg of oral ampicillin every six hours for ten days.
- d. If vomiting is severe, withhold fluids by mouth. Give the patient 1000 cc of 5% dextrose in water and 1000 cc normal saline intravenously every twenty-four hours. If bowel sounds are absent for more than twenty-four hours, refer the patient to a hospital.
- e. If an abscess is present in the pelvis, refer the patient to a hospital.

PREVENTION

- a. Tell women to avoid intercourse with men with penile discharges.
- b. Condoms will help prevent problems spread by sexual contact.
- c. Treat all sexual partners of women with pelvic inflammatory disease with a total of

4.8 g of procaine penicillin G IM in two different sites, 2.4 g in one hip and 2.4 g in the other hip. Also, give them 1 g of oral probenecid.

- d. Strict adherence to sterile procedures during deliveries and abortion will prevent pelvic infections.

NON-SPECIFIC VAGINITIS

SYMPTOMS

Discharge from vagina that causes itching
Burning on urination
Pain during intercourse

SIGNS

Inflammation of external genitals
Inflammation of walls of vagina
Red, swollen cervix
Thick, pussy, white or yellow vaginal discharge

PATIENT CARE

- a. Tell the patient to put one triple sulfa vaginal suppository into the vagina in the morning and one in the evening for three days. Then insert one in the evening for four more days.
- b. Tell the patient to return for a follow-up examination after two weeks. If the symptoms have not improved, refer the patient to a hospital. If the cervix is still red and inflamed, refer the patient to a hospital.

TRICHOMONAL VAGINITIS

SYMPTOMS

Vaginal discharge with unpleasant odor
Possible vaginal bleeding
Itching around vagina

SIGNS

- Frothy, yellow-green discharge with foul smell
- Inflammation of external genitals, cervix, and walls of vagina
- Vaginal bleeding in severe cases

PATIENT CARE

- a. Give the patient 2 g of oral metronidazole in a single dose.
- b. Give the patient's sexual partner 2 g of oral metronidazole in a single dose. Treat the patient and her sexual partner at the same time.
- c. Advise the use of a condom during intercourse until you have examined each sexual partner and found that each is free of symptoms.
- d. Tell the patient and her sexual partner to return for a follow-up examination after two weeks. If the symptoms have not improved, refer the patient to a hospital. If the cervix is still red and inflamed, refer the patient to a hospital.
- e. Do not give metronidazole to pregnant women during the first three months of pregnancy.

MONILIAL VAGINITIS

SYMPTOMS

- Thick, white vaginal discharge
- Burning pain on urination
- Itching around vagina

SIGNS

- Red, inflamed external genitals
- Thick, white, curd-like discharge from vagina
- Patches of white plaque clinging to walls of vagina
- Bloody oozing when plaque removed

PATIENT CARE

- a. Instruct the patient to put one nystatin vaginal suppository tab into the vagina in the morning and one in the evening for three days. Then insert one in the evening for seven more days.
- b. If the woman is taking oral contraceptives,

discuss with her other means of contraception, and recommend a change. Monilial vaginitis occurs more frequently with the use of oral contraceptives.

- c. If the woman has diabetes, check on the treatment of her diabetes.
- d. Examine the woman again in two to three weeks. If her symptoms have not improved, refer her to a hospital. If her symptoms have improved, but her cervix remains red and inflamed, refer her to a hospital.
- e. Advise the woman not to have sexual intercourse with any man who has a discharge from his penis.

Tumors of the Female Reproductive System

CANCER OF THE UTERUS OR CERVIX

SYMPTOMS

- Bloody discharge
- Heaviness in the pelvis
- Irregular breathing, or any bleeding after menopause

SIGNS

- Cervical erosion
- Enlarged uterus
- Blood tinged discharge from the cervix
- Mass in areas on either side of the uterus

PATIENT CARE

If you suspect cancer, refer the patient to a hospital.

PREVENTION

Early detection and treatment of cancer of the cervix or uterus will prevent death.

FIBROID TUMOR IN THE UTERUS

SYMPTOMS

- Heaviness in the pelvis
- Increased urination
- Constipation
- Heavy, painful menstrual bleeding

SIGNS

Smooth, firm, round tumor felt on bimanual examination
Tumor that moves with the uterus

PATIENT CARE

Refer the patient to a hospital.

TUMOR OF THE OVARY

SYMPTOMS

Enlarged abdomen
Heaviness in the pelvis

SIGNS

Smooth, movable, non-tender mass on one side of the uterus

PATIENT CARE

Refer the patient to a hospital.

BREAST LUMPS

SYMPTOMS

Lump in the breast, usually not painful
Possible discharge from the nipple

SIGNS

Lump usually not tender
Possible multiple lumps
Lump attached to the skin, causing a dimple
Lump attached to nipple, changing shape of nipple
Enlarged lymph glands in the underarms
Discharge from the nipple on milking

PATIENT CARE

Refer all patients with breast lumps to a hospital.

PREVENTION

Early detection and treatment of breast lumps may decrease the number of deaths caused by cancer of the breast.

Menstrual Cramps, Side Effects of Contraceptives, Menopause, and Atrophic Vaginitis

MENSTRUAL CRAMPS

SYMPTOMS

Dull, cramping pain in lower abdomen or lower back during menstrual period
Pain that starts a day before menstruation
Headache, nausea, diarrhea

SIGNS

Possible polyp at cervical opening in rare cases

PATIENT CARE

- a. Assure the woman that her menstrual cramps are not a serious health problem.
- b. Tell her to take 600 mg of aspirin as soon as the pain begins. Tell her to repeat the dosage every four hours, as necessary.
- c. If the pain is very severe, a short period of rest may be helpful. Mild pressure from a pillow over the lower abdomen may also help.
- d. If an IUD is in place, encourage the patient to keep it. Only if aspirin does not relieve the discomfort should you discuss removing the IUD and using another kind of contraceptive.
- e. If you find a tumor such as a polyp on the women's cervix, refer her to a hospital.

PREVENTION

Physical activity may prevent severe cramping. Tell women to continue their normal activities during their menstrual periods.

SIDE EFFECTS OF CONTRACEPTIVES

SYMPTOMS

Weight gain
Nausea and vomiting

Low backache
 Vaginal discharge
 Heavy or scant bleeding during menstrual period
 Spotting between menstrual periods

SIGNS

Weight gain
 Vaginal discharge
 Infection at site of tubectomy

PATIENT CARE

- a. If the patient using oral contraceptives complains of increased weight, reassure her that this problem will clear up in three to six months without treatment. It is usually caused by fluid in her body.
- b. Nausea and vomiting may occur with the use of oral contraceptives. If the problem continues for more than a few weeks, refer the patient to a hospital.
- c. Patients taking oral contraceptives, as well as those with an IUD, may complain of backache. Treat the backache with aspirin and increased rest.
- d. Vaginal discharge may result from an infection in the vagina. Treat the patient with the appropriate drug.
- e. Bleeding may be a problem, especially changes in menstruation. If the patient has heavier bleeding during her periods, give her 300 mg of ferrous sulfate and 1 mg of folic acid three times a day for one month. If the heavy bleeding continues beyond her usual menstrual period, refer her to a hospital immediately.
- f. Treat any skin infection associated with tubectomy as you would treat other skin infections. Remove the sutures and instruct the patient to soak the infected site three times a day with warm saline soaks. Refer the patient to a hospital if she has evidence of a deep infection.

MENOPAUSE

SYMPTOMS

Scanty, irregular, or heavy menstruation
 Hot flashes

SIGNS

With long periods of bleeding, pale conjunctivae, mucous membranes, and nail beds, and other signs of anemia.

PATIENT CARE

- a. Encourage the patient to continue a normal, active life.
- b. Tell her she needs good food, fresh air, exercise, and sleep.
- c. Reassure the patient that menopause is a normal, healthy period of life.
- d. Refer a patient with constant or severe bleeding to a hospital.
- e. If any bleeding occurs after menopause is completed, refer the patient to a hospital. The bleeding may be a sign of serious illness.
- f. Treat anemia caused by the bleeding with 300 mg of ferrous sulfate three times a day for at least thirty days.

ATROPHIC VAGINITIS

SYMPTOMS

Burning pain during intercourse
 Watery or pink vaginal discharge
 Itching after intercourse

SIGNS

Older woman
 Slight, watery, pink discharge, with possible trace of blood
 Smooth, pale vaginal walls
 Possible shallow cracks in vaginal walls

PATIENT CARE

- a. Tell the patient to put one 0.5 mg diethylstilbestrol vaginal suppository inside the vagina the first and third day of the week for three weeks. Then stop for one week. Then resume the treatment for three weeks. Continue this pattern for three months.
- b. Tell the woman to lie down for thirty minutes after inserting the suppository.
- c. Tell the woman to avoid sexual intercourse until the pain and itching stop.
- d. If the symptoms return, repeat the treatment. Be certain to leave a space of one month between the three-month treatment periods.

PRENATAL CARE

Patient Care for Common Conditions during Pregnancy

MORNING SICKNESS

Early in pregnancy, a feeling of nausea is very common, especially in the morning. Sometimes, vomiting can become very severe. The woman may become dehydrated as a result of severe vomiting.

PATIENT CARE

- a. Advise the patient to eat frequent, small meals that are easy to digest.
- b. Encourage her to avoid spicy or greasy foods, or other foods that seem to make the problem worse.
- c. Refer her to a hospital if the vomiting is severe.

HEARTBURN

A burning sensation under the lower end of the breast bone and in the upper abdomen is quite common during pregnancy.

PATIENT CARE

- a. Tell the patient that frequent small meals will help to relieve this problem. Tell her that a small snack at bedtime and on rising in the morning may also be helpful.
- b. Stomach acid in the esophagus causes heartburn. Give the patient antacid tablets or liquid to help relieve the discomfort.

CONSTIPATION

Bowel movements that are very hard or infrequent are a common problem during pregnancy, as well as at other times.

PATIENT CARE

- a. Encourage the patient to drink at least eight glasses of water or other kinds of fluid every day. The extra fluid will help to make

the stools softer by giving the body additional fluids.

- b. Foods that contain fibers and other undigestible material are an important part of the diet. Urge the patient to eat fresh fruits and vegetables. These foods will increase the size of the stools and help to prevent constipation.
- c. When the patient feels the urge to have a bowel movement, and does not have one at that time, the problem of constipation becomes worse. Regular bowel movements, when the urge to have them is present, are important in preventing constipation. The urge to have a bowel movement usually comes before or after a meal.
- d. If necessary, tell the patient to take mineral oil once a day until the stools become soft. However, advise the patient to use mineral oil for only a short period of time. Mineral oil interferes with the absorption of certain important food substances.

HEMORRHOIDS

Hemorrhoids occur more frequently during pregnancy because of the large uterus, which interferes with normal blood circulation from the lower part of the body.

PATIENT CARE

See Patient Care Guide for Hemorrhoids

VAGINITIS

Vaginitis is an inflammation of the vagina that usually causes itching, burning, and discharge.

PATIENT CARE

- a. If the patient has a thick, yellow or white, pussy vaginal discharge, see Patient Care Guide for Non-Specific Vaginitis.

- b. If the patient has a yellow-green, frothy vaginal discharge with unpleasant odor, see Patient Care Guide for Trichomonal Vaginitis.
- c. If the patient has a thick, white discharge that attaches to the wall of the vagina in small patches, see Patient Care Guide for Monilial Vaginitis.
- d. If you suspect that the vaginitis results from gonorrhea, see Patient Care Guide for Gonorrhea.
- e. Do not give metronidazole to pregnant women during the first three months of pregnancy.

PAIN OR BURNING ON URINATION

Pain or burning on urination may be a sign of a urinary tract infection.

PATIENT CARE

See Patient Care Guide for Urinary Tract Infection

ANEMIA

Women who have had one or more infants often suffer from anemia. They may be pale if the anemia is severe. The anemia is usually caused by lack of iron. But lack of folic acid may also be responsible.

PATIENT CARE AND PREVENTION

- a. Treat all pregnant or lactating women with one tablet daily of iron and folic acid.
- b. Give all pregnant or lactating women who appear pale one tablet of iron and folic acid three times a day for at least two months in order to restore the iron that has been lost from the body.

CHRONIC COUGH

If a pregnant or lactating woman coughs daily, especially if she coughs up sputum or blood, refer her to a hospital for careful examination. She may be suffering from tuberculosis.

SWOLLEN, TWISTED VEINS

Veins under the skin of a pregnant woman's legs may become swollen and painful. This problem occurs in the last few months of pregnancy.

PATIENT CARE

- a. If the veins are red and tender, refer the patient to a hospital.
- b. Encourage the woman to lie down several times during the day with her feet elevated. Lying down will allow the blood to flow out of the veins.
- c. Tell the woman to avoid long periods of standing. Standing causes the blood to collect in the veins and makes the problem worse.
- d. Tell the woman that whenever she sits down, she should put her legs out in front of her and raise them.

BACKACHE

Urinary tract infection during pregnancy may cause low back pain. More commonly, however, low back pain results from the strain of carrying the growing uterus. Backache may become worse as the pregnancy progresses.

PATIENT CARE

- a. Check to be certain that the patient does not have an infection in her urinary tract.
- b. Urge the patient to stand and walk with good posture. Tell her to keep her back straight and to hold her abdomen in as much as possible. Good posture will help to relieve the strain on the low back muscles.
- c. Show the woman how she should lift heavy objects, keeping her back straight and bending from her knees and hips.
- d. Walking and exercise are very helpful. But tell the woman that if she becomes tired and continues to walk without rest periods, the backache will become worse.
- e. Tell the woman to sleep on a firm mattress.
- f. Tell the woman to apply heat to her lower back with a water bottle or other warm object to relieve some of the pain.

SHORTNESS OF BREATH

Late in pregnancy, the uterus pushes up on the diaphragm and makes breathing more difficult.

PATIENT CARE

- a. Examine the patient's lungs for signs of congestion. Congestive heart failure also causes shortness of breath.
- b. Show the woman how to stretch her arms above her head and take deep breaths. This exercise will help her lungs to obtain more oxygen.
- c. As soon as the infant is born, the shortness of breath will disappear.

Pregnancy Problems

SEVERE ANEMIA IN PREGNANCY

SYMPTOMS

Tiredness
Shortness of breath
Often a history of previous pregnancies, abortions, or blood loss

SIGNS

Pale conjunctivae, mucous membranes, and nail beds
Signs of heart failure

PATIENT CARE

- a. Give the patient 300 mg of ferrous sulfate three times a day throughout pregnancy and lactation.
- b. Give the patient 1 mg of folic acid daily throughout pregnancy and lactation.
- c. Treat the patient for hookworm and malaria, if these problems are present.
- d. If the patient shows signs of heart failure, refer her to a hospital immediately. She should deliver in a hospital.

PREVENTION

- a. Give 300 mg of ferrous sulfate and 1 mg of folic acid daily to all women throughout pregnancy and lactation.

- b. Encourage pregnant women to eat foods that are rich in iron, such as green leafy vegetables, meat, and dairy products.
- c. During the last three months of pregnancy, give treatment for malaria to all pregnant women who live where malaria is common.

DIABETES IN PREGNANCY

SYMPTOMS

Usually, no specific symptoms
Possible history of stillbirth or very large newborn infant
Possible history of bacterial infections

SIGNS

Sugar in the urine
Complications of preeclampsia, excess fluid in the uterus, and bacterial infections

PATIENT CARE

Refer a patient with sugar in the urine to a hospital for prenatal care. Use indicator paper to test the patient's urine for sugar. Follow the instructions that come with the indicator paper.

PREVENTION

Diabetes cannot be prevented. However, you should urge a woman with diabetes to avoid becoming pregnant, and to seek early prenatal care if she does become pregnant.

HEART DISEASE IN PREGNANCY

SYMPTOMS

Shortness of breath
Tiredness or fatigue
Swollen legs
Possible history of rheumatic heart disease

SIGNS

Cyanosis
Pallor
Heart murmur
Enlarged liver
Swollen legs
Fluid in the chest or abdomen
Rales

PATIENT CARE

- a. Refer the patient to a hospital for evaluation and treatment.
- b. Tell a woman with heart disease that she should deliver in a hospital.
- c. Prevent anemia. Anemia increases the risk of heart failure by weakening the heart.

ECTOPIC PREGNANCY

SYMPTOMS

Sudden onset of severe pelvic pain
No menstrual period for one or two months

SIGNS

Tenderness and guarding in lower abdomen
Bluish, soft cervix
Bleeding from cervix
Signs of shock if internal bleeding is severe

PATIENT CARE

- a. Transfer the patient to a hospital immediately. The hospital must be prepared to carry out an emergency operation and to give a blood transfusion. Do not perform a bimanual examination if you suspect ectopic pregnancy.
- b. Treat the patient for shock. Elevate her legs. Keep her warm by covering her with a light blanket. Start an intravenous infusion with a #18 needle, and give 1000 cc of normal saline solution while enroute to the hospital.
- c. Send her relatives and friends to the hospital with her to donate blood for her.

PREVENTION

Previous abdominal surgery and pelvic inflammatory disease increase the risk of ectopic pregnancy.

SEPTIC ABORTION

SYMPTOMS

Vaginal bleeding
Fever

Possible attempt to terminate the pregnancy, followed by onset of weakness, fever, and abdominal pain

SIGNS

Fever and rapid pulse
Lower abdominal tenderness
Bluish, soft cervix
Blood-tinged discharge from open cervix
Tender, slightly enlarged uterus

PATIENT CARE

- a. Remove any foreign objects you find in the cervix or vagina.
- b. Transfer the patient to a hospital immediately.
- c. Before transfer, give the patient 1.2 g of procaine penicillin G IM and 1 g of streptomycin IM.
- d. Treat the patient for shock.

PREVENTION

- a. Encourage the regular use of adequate child spacing methods so that unwanted pregnancy does not occur.
- b. Abortions using sterile instruments will not lead to infections.

PREECLAMPSIA AND ECLAMPSIA IN PREGNANCY

SYMPTOMS

Headache
Increased swelling of legs
History of high blood pressure, visual problems, convulsions in previous pregnancy

SIGNS

Increased blood pressure, compared to previous visit
Weight gain greater than 1 kg over two week period
Swelling of face, hands, feet, or vulva
Increased reflexes
Protein in urine
Convulsions
Severe edema
Coma

PATIENT CARE

- a. Refer the patient to a hospital if she has high blood pressure or a combination of other symptoms and signs of preeclampsia.

- b. The patient should deliver in a hospital. Her blood pressure may rise rapidly at the time of labor and delivery.
- c. Follow the patient carefully prior to delivery. Tell her to rest in bed several hours a day. Tell her to lie on her side. Record her blood pressure and weight weekly. Transfer her to a hospital early for delivery.
- d. Preeclampsia that progresses to convulsions is eclampsia. Treat eclampsia as a medical emergency. Rapid delivery is the most important means of treating eclampsia. Transfer the woman to a hospital as an emergency if she is not in labor, or is in early labor. If she is already in a late stage of labor, assist in the delivery.
- e. If the patient has had a convulsion, give her up to 8 ml of a 50% solution of magnesium sulfate intramuscularly in each buttock. Give her 4 ml of the solution intramuscularly every six hours until she has delivered and her blood pressure has come down. Do not give magnesium sulfate if the woman is passing no urine, or if she is breathing less than sixteen times per minute or is in a coma.
- f. Also treat the convulsions with diazepam. Give up to 10 mg IV of diazepam, diluted in 10 ml of sterile water for injection, over a ten minute period. Repeat this dosage every fifteen minutes for a total of 30 mg if the convulsions are continuous.

FETAL DEATH

SYMPTOMS

Fetus stops moving and growing
History of previous stillbirth, diabetes, or untreated syphilis

SIGNS

No fetal heart sounds
Uterus small for the estimated fetal age

PATIENT CARE

Refer the patient to a hospital for further evaluation and care.

BLEEDING EARLY IN PREGNANCY

SYMPTOMS

Vaginal bleeding that occurs outside of regular menstrual period
Woman may not know that she is pregnant
Possible crampy abdominal pains

SIGNS

Bluish, soft cervix indicating that woman is pregnant
With severe bleeding, look for signs of shock
Uterus enlarged in relationship to length of pregnancy

PATIENT CARE

- a. If the cervical opening is closed and bleeding is light, advise the patient to remain in bed and to avoid sexual intercourse. Her pregnancy may continue.
- b. If the bleeding is heavy, or the cervix is open, transfer the patient to a hospital immediately.
- c. If the bleeding is severe and the cervix is open, give the patient 0.2 mg of ergonovine maleate IM. At the same time, begin an intravenous infusion and give the patient 1000 cc of normal saline or Ringer's lactate solution while enroute to the hospital.

BLEEDING LATE IN PREGNANCY

SYMPTOMS

Bright red vaginal bleeding
Lower abdominal pain

SIGNS

With severe bleeding, signs of shock
Tender, hard uterus

PATIENT CARE

- a. Do not perform a pelvic examination.
- b. Start an intravenous infusion with Ringer's lactate or normal saline solution.
- c. Transfer the patient to a hospital as rapidly as possible. The patient may quickly die of shock from severe blood loss.

MALARIA IN PREGNANCY

SYMPTOMS

Fever
Shaking chills

SIGNS

Pallor
Jaundice

PATIENT CARE

- a. When you suspect malaria, and the patient is pregnant, refer her to a hospital for treatment.
- b. Give the patient one iron and folic acid tablet three times a day for at least two months. Continue with one tablet per day throughout pregnancy and lactation in order to prevent further anemia.

SICKLE CELL DISEASE IN PREGNANCY

SYMPTOMS

Sudden onset of fever
Severe pain in bones and joints
History of similar attacks

SIGNS

Pallor
Jaundice
Swelling of the joints of hands and feet

PATIENT CARE

- a. If you suspect that the patient has sickle cell disease, refer her to a hospital for care.
- b. Give the patient 5 mg of folic acid daily throughout pregnancy. This may reduce the frequency of sickle cell crises.
- c. If the patient develops severe pain and fever, transfer her to a hospital immediately. Begin an intravenous infusion and give her Ringer's lactate while en route to the hospital.

LABOR AND DELIVERY

Common Problems of Labor and Delivery

FETAL DISTRESS

SYMPTOMS

None

SIGNS

Irregular fetal heart rate below one hundred beats per minute
Green meconium
Increased fetal movement

PATIENT CARE

- a. When any of the signs of fetal distress alert you, immediately determine its cause. Correcting the cause may bring the fetus out of distress.
- b. If you cannot correct the cause of the fetal distress, a speedy delivery may prevent damage to the fetus.
- c. If possible, transfer the patient to a hospital for delivery.

MATERNAL DISTRESS

SYMPTOMS

None

SIGNS

During labor, pulse over 90 beats per minute, or gradual increase in pulse rate
Body temperature over 37.5°C
Blood pressure higher than 140/90
Restlessness or anxiety
Excessive tiredness and weakness
Dehydration

PATIENT CARE

- a. Prompt delivery is the quickest way to treat maternal distress. When signs of maternal distress develop, transfer the patient promptly to a hospital.
- b. When the patient suffers from any of the possible causes of prolonged labor, examine her regularly in order to determine whether

she is progressing through labor. If she shows poor progress, transfer her to a hospital immediately.

URINE IN THE BLADDER DURING LABOR

SYMPTOMS

Slow progress in labor
No urine passed for several hours

SIGNS

Tender, mid-line mass in lower abdomen

PATIENT CARE

- a. Encourage the patient to pass urine every three hours during labor.
- b. Have the patient empty her bladder at the beginning of the second stage of labor.
- c. If the patient is unable to pass urine, catheterize her.

PREMATURE LABOR

SYMPTOMS

Labor that begins before due date

SIGNS

Active labor
Fetus smaller than expected for term infant

PATIENT CARE

- a. Transfer the patient to a hospital, if possible.
- b. With severe bleeding, start an IV and begin normal saline drip before transferring the patient to a hospital.
- c. If labor is active with no bleeding, tell the patient to lie down quietly. Give her 30 mg of oral phenobarbital. This may interrupt the labor. If it does not, she will deliver the baby

prematurely. Do not repeat the dosage, because phenobarbital will reduce the infant's ability to breath.

INCOMPLETE FETAL ROTATION

SYMPTOMS

Prolonged second stage of labor

SIGNS

Fully dilated cervix

Fetal head low in the pelvis

Sutures of fetal head remain in horizontal rather than vertical position

PATIENT CARE

Transfer the patient to a hospital immediately upon detection of this problem.

SMALL OR ABNORMALLY SHAPED PELVIS

SYMPTOMS

Prolonged labor

SIGNS

Fetus remains high in the pelvis in spite of hard labor

Woman may be very short or have pelvic deformity

Diagnosis made on the basis of pelvic examination

PATIENT CARE

Transfer the patient to a hospital as quickly as possible when you suspect this problem.

EARLY RUPTURE OF THE BAG OF WATERS

SYMPTOMS

Sudden rush of fluid from vagina before labor begins

SIGNS

Fluid that leaks from vagina

Fluid usually clear, pale, or straw-colored

Fluid possibly green or foul-smelling in cases of infection or fetal distress

PATIENT CARE

- a. If the patient delivers within twenty-four hours, no other special care is required.
- b. If labor has not begun within twelve hours after rupture of the membranes, give the patient intramuscular ampicillin. See Guide for Calculating Antibiotic Dosages.
- c. If the patient has a fever, or foul-smelling or greenish meconium or fluid is present, transfer her to a hospital immediately.

RETAINED PLACENTA

SYMPTOMS

Bleeding during postpartum period

SIGNS

Placenta not delivered within sixty minutes after infant's delivery

Possible missing piece of placenta, which has been torn off and remains within the uterus

Postpartum bleeding caused by retained placenta

PATIENT CARE

- a. The placenta usually delivers without assistance. However, if it does not deliver within sixty minutes after delivery of the infant, you must consider that the patient has a retained placenta.
- b. Following the delivery of the infant, observe the mother carefully for the signs of placental separation. These include lengthening of the umbilical cord, sudden rush of blood, change in shape of the uterus as it becomes firmer and rounder, and upward movement of the uterus toward the umbilicus as the placenta slides downward.
- c. If placental separation has not occurred in thirty minutes following the birth of the infant, you may attempt to assist in the separation of the placenta. Gently and steadily pull downward on the umbilical cord. At the same time, gently hold the uterus with your other hand so that you do not pull the uterus downward into the birth canal. Do not massage the uterus during this time.
- d. If this procedure does not lead to placental separation and delivery, and the patient is

not losing blood from her vagina, transfer her to the hospital for removal of the placenta.

- e. If the patient is bleeding from the vagina and has a retained placenta, you must manually remove the placenta. Follow Patient Care Procedure for Manually Removing a Placenta.

PROLONGED LABOR

SYMPTOMS

Active labor pains for as long as twenty-four hours, without delivery

SIGNS

Incomplete fetal rotation
 Small, or abnormally shaped pelvis
 Urine in the bladder
 Face-up presentation
 Face presentation
 Breech presentation
 Transverse presentation

PATIENT CARE

- a. Attempt to identify the cause for the prolonged labor and correct it.
- b. If the labor does not progress rapidly after you have attempted to correct the cause, transfer the patient to a hospital as quickly as possible. Prolonged labor leads to maternal distress and to fetal distress and death.

BREATHING PROBLEMS OF A NEWBORN

PATIENT CARE

- a. If the infant is pink but struggling to breathe, gently clean out the nose and mouth with a bulb syringe mucus extractor. This will usually cause the infant to start breathing normally.
- b. If the infant is pale, limp, and not breathing, gently clean out the nose and mouth with a mucus extractor. Place the infant flat on a table with your hand under his neck and with his head tilting back on the table. This position will straighten out his airway. Place

your mouth over the infant's nose and mouth and gently puff air into his lungs with the air in your cheeks. Remove your mouth between each breath, and observe the infant's chest to see whether it becomes smaller. Gently puff air into his lungs about twenty times per minute until the infant starts to breathe on his own. Continue this procedure until the infant is breathing or shows no evidence of life.

- c. If the infant is breathing irregularly and not deeply, place the infant flat on his back. Place your hand under the infant's neck and allow the head to tilt backwards onto the table. This position will straighten out the infant's airway. Gently bend the legs up onto the infant's chest and then straighten them out. Continue this in a regular rhythm, about twenty times per minute, until the infant's breathing improves.
- d. Always handle a newborn gently and keep him warm. Never slap a newborn. Never use very hot or very cold water on a newborn. Never roughly rub or bend a newborn.
- e. If a newborn continues to have trouble breathing, transfer him to a hospital.

Abnormal Presentations during Delivery

FACE-UP PRESENTATION

SYMPTOMS

First stage of labor longer than normal

SIGNS

Depression just below the woman's umbilicus, where you would normally feel the infant's back
 Infant's anterior fontanelle facing toward the front rather than toward the back

PATIENT CARE

- a. Labor should progress normally if the infant's head flexes as the infant descends through the birth canal.
- b. If the first stage of labor is prolonged, transfer the patient to a hospital. Do this before the infant or the mother begins to show signs of distress.

FACE PRESENTATION

SYMPTOMS

Prolonged first stage of labor

SIGNS

Unable to feel the smooth, round part of infant's skull during vaginal examination

See or feel the infant's face

PATIENT CARE

- a. Be careful not to harm the infant's eyes during the vaginal examination.
- b. The infant's chin must deliver first in a face presentation. To help the chin to deliver first, gently hold back on the infant's forehead until the chin delivers.
- c. Perform an episiotomy when the cervix is fully dilated. See Patient Care Procedure for Performing and Repairing an Episiotomy.
- d. If normal delivery does not occur rapidly after full dilation of the cervix, transfer the patient to a hospital.

BREECH PRESENTATION

SYMPTOMS

None

SIGNS

Fetal head in the upper abdomen and fetal buttocks in lower abdomen

Feel infant's buttocks, or one or both legs, on vaginal examination

PATIENT CARE

- a. When you suspect that the fetus is in a breech position, transfer the patient to the hospital for delivery.
- b. If the patient is already in labor, deliver her according to the Patient Care Procedure for Assisting Delivery in a Breech Presentation.

TRANSVERSE PRESENTATION

SYMPTOMS

Prolonged labor without progress

SIGNS

On abdominal examination, neither the head nor the buttocks are found in the pelvis

On vaginal examination, arm, leg, or shoulder present at the cervix

Possible maternal distress with prolonged labor

PATIENT CARE

- a. The fetus cannot deliver when in the transverse position. Continued labor will lead to death of both fetus and mother.
- b. If you detect a fetus in the transverse position, refer the patient to a hospital prior to labor. Transfer her immediately when you discover this problem after labor has begun.

MULTIPLE PREGNANCY

SYMPTOMS

Often no symptoms

Woman growing larger than normal for single pregnancy

SIGNS

Feel two or more heads, or have difficulty in determining the position of the fetus, on examination of the uterus

Uterus larger than expected for stage of pregnancy

Two or more fetal heart sounds

PATIENT CARE

- a. Refer any patient with multiple pregnancy to a hospital.
- b. If labor has already begun, or the patient has already delivered one infant, carry out the delivery following the Patient Care Procedure for Assisting Delivery in a Multiple Pregnancy.

Emergencies during Labor and Delivery

PROLAPSE OF THE CORD

SYMPTOMS

None

SIGNS

Rope-like, slippery cord protruding through cervix during first or second stage of labor

PATIENT CARE

- a. Prolapse of the cord is more likely to occur with premature rupture of the membranes, breech or transverse presentation, or multiple pregnancy. Look frequently for evidence of prolapsed cord during the progress of labor in these conditions.
- b. If delivery of the infant within a few minutes is not possible, attempt to slip the cord back up into the uterus. If this is not possible, place the woman on her knees with her head down. This position will help to reduce fetal pressure on the cord. Transfer the patient to a hospital as quickly as possible.
- c. If the cord is pressed between the fetus and the mother's pelvis, and the infant is not delivered in a few minutes, the fetus will die. Prepare the family for this outcome.

RUPTURE OF THE UTERUS

SYMPTOMS

During hard labor, woman suddenly stops having pain with her contractions
Contractions stop

SIGNS

Contractions absent
Evidence of blood loss, with shock
Signs of fetal distress

PATIENT CARE

- a. Rapidly transfer the patient to a hospital for surgery and blood transfusion.
- b. Start an intravenous infusion and give normal saline solution while the patient is on the way to the hospital.

PREECLAMPSIA AND ECLAMPSIA DURING LABOR

SYMPTOMS

Headache
Increased swelling of legs
History of high blood pressure, visual problems, convulsions in previous pregnancy

SIGNS

Increased blood pressure, compared to previous visit
Weight gain greater than 1 kg over two week period
Swelling of face, hands, feet, or vulva
Increased reflexes
Protein in urine
Convulsions
Severe edema
Coma

PATIENT CARE

- a. Refer the patient to a hospital if she has high blood pressure or a combination of other symptoms and signs of preeclampsia.
- b. The patient should deliver in a hospital. Her blood pressure may rise rapidly at the time of labor and delivery.
- c. Follow the patient carefully prior to delivery. Tell her to rest in bed several hours a day. Tell her to lie on her side. Record her blood pressure and weight weekly. Transfer her to a hospital early for delivery.
- d. Preeclampsia that progresses to convulsions is eclampsia. Treat eclampsia as a medical emergency. Rapid delivery is the most important means of treating eclampsia. Transfer the woman to a hospital as an emergency if she is not in labor, or is in early labor. If she is already in a late stage of labor, assist in the delivery.
- e. If the patient has had a convulsion, give her up to 8 ml of a 50% solution of magnesium sulfate intramuscularly in each buttock. Give her 4 ml of the solution intramuscularly every six hours until she has delivered and her blood pressure has come down. Do not give magnesium sulfate if the woman is passing no urine, or if she is breathing less than sixteen times per minute or is in a coma.
- f. Also treat the convulsions with diazepam. Give up to 10 mg IV of diazepam, diluted in 10 ml of sterile water for injection, over a ten minute period. Repeat this dosage every fifteen minutes for a total of 30 mg if the convulsions are continuous.

BLEEDING DURING LABOR

SYMPTOMS

None

SIGNS

Sudden onset of bright red vaginal bleeding

PATIENT CARE

- a. Bleeding from the vagina during labor is a very serious condition that often leads to shock, with death of both the mother and the infant.
- b. Transfer the patient to a hospital as quickly as possible.
- c. Start an intravenous infusion and give the patient normal saline solution at a rapid rate while on the way to the hospital.
- d. Be sure to bring the patient's relatives to the hospital so that they can donate blood for the patient.

POSTPARTUM BLEEDING

SYMPTOMS

Bleeding from vagina during the first twenty-four hours after delivery

SIGNS

Low blood pressure, rapid pulse, cold and clammy skin, pallor, and other signs of shock from blood loss

Soft, boggy uterus on palpation through the abdominal wall, when the uterus has failed to contract properly

Torn or incomplete placenta when a piece of placenta remains inside the uterus, causing the bleeding

Laceration or tear of cervix or lower birth canal

PATIENT CARE

- a. Give the patient 0.2 mg ergonovine maleate IM immediately. Repeat this dosage in two hours if bleeding continues.
- b. If the uterus feels soft and boggy, use bimanual compression of the uterus to stop the bleeding and bring about contraction of the uterus. Do not lose any time, but wash your hands thoroughly and put on sterile gloves if available. Then insert one hand into the vagina and press it upward and toward the abdominal wall, with your palm facing upward. At the same time, press downward on the uterus through the wall of the abdomen with your other hand. This pressure will compress the uterus between your two hands. When the uterus is between your hands, massage it to help bring about contraction.
- c. Begin an intravenous infusion. Give the patient normal saline or Ringer's lactate intravenously. Give her up to 1000 ml over a three to four hour period if she shows any signs of shock.
- d. If bleeding continues after the uterus has contracted, transfer the patient to a hospital as quickly as possible. Accompany her to the hospital so that you can continue to massage the uterus and maintain the intravenous infusion on the way. If the bleeding is caused by a laceration or retained placenta, the patient will require further treatment at the hospital.

EMERGENCIES IN A NEWBORN

The following problems require immediate transfer of a newborn to a hospital for care.

Difficulty breathing

Blueness or pallor

Yellow color of skin within twenty-four hours of birth

Continuous vomiting

No bowel movement in first twenty-four hours of life, or no opening at anus

Any unusual behavior such as rolling eyes, jerky movements, constant crying, and irritability

POSTNATAL CARE

Postnatal Problems

SWOLLEN BREASTS

SYMPTOMS

Throbbing, painful breasts
Usually present third day after delivery

SIGNS

Tight, shiny skin over breasts
Visible veins in breasts
Very firm, tender breasts
No fever or other signs of inflammation or infection

PATIENT CARE

- Encourage the mother to begin breast-feeding as soon after delivery as possible.
- Encourage her to breast-feed her infant every two to three hours. Tell her to use both breasts at each feeding. However, tell her to start the breast-feeding on the breast opposite from the one that the infant finished breast-feeding on at the previous feeding.
- If the areas around the nipples are swollen, show the mother how to express the milk from her nipples with her fingers. Expressing the milk will allow the infant to get a better hold on the nipple.
- Tell the mother to support the breasts with a bra or binder between feedings.
- Tell her to dry the nipples and massage them gently after each feeding so that they will remain firm and free of cracks.

LACK OF BREAST MILK

SYMPTOMS

Infant cries and acts irritable
Not satisfied after breast-feeding

SIGNS

Poor weight gain

PATIENT CARE AND PREVENTION

- Encourage the mother to begin breast-feeding her infant immediately after deli-

very. The fluid that comes from the breasts during the first few days is extremely valuable for the infant's health.

- Tell the mother to breast-feed the infant every two to three hours. The infant's sucking will stimulate the production of milk.
- Complete emptying of the breast stimulates milk production. To accomplish this, tell the mother to empty alternate breasts completely at each feeding.
- Tell the mother to give her infant no other food or milk during the first four months of life. If the infant receives other food, he will reduce his breast milk consumption.
- Check to make sure that the mother is not taking oral contraceptives. If she is, urge her to use a different method of family planning. Oral contraceptives can reduce milk production.
- Urge the mother to eat extra food during lactation. Milk production requires extra calories and extra protein. The mother must replace the calories and protein to remain healthy and continue to breast-feed.
- Encourage the mother to supplement her diet with 300 mg of ferrous sulfate and 1 mg of folic acid daily during the period of lactation.

HEMORRHOIDS

SYMPTOMS

Pain and itching at the anus
Possible bleeding from anus

SIGNS

Swollen, hard, bluish blood vessels near anus

PATIENT CARE

- Advise the patient to use a lignocaine and hydrocortisone rectal suppository two to three times a day after a bowel movement.

- b. Urge the patient to drink extra water each day. If the stools are very hard, tell her to take two to three teaspoons of mineral oil twice a day in order to make the stools softer. Tell her to continue to take the mineral oil until the pain has gone away. However, tell her to stop taking mineral oil as soon as possible.
- c. While the hemorrhoids are painful, advise the patient to sit in warm water for up to thirty minutes three times a day. Warm water soaks will relieve much of the pain and discomfort.
- d. If the hemorrhoid is very hard and painful, or if it does not improve within a few days, refer the patient to a hospital. Sometimes, the hemorrhoid will require surgical removal.

Other Postnatal Problems

CRACKS ON NIPPLES

SYMPTOMS

Sharp pain in nipple when infant sucks

SIGNS

Small crack on nipple, with bleeding

PATIENT CARE

- a. Tell the mother not to feed her infant from the affected breast for twenty-four hours.
- b. Show the mother how to express milk from the breast manually and to feed the milk to her infant with a cup and spoon.
- c. Tell the mother to keep the nipple clean and dry. Tell her to expose it to the air for at least thirty minutes every few hours.

PREVENTION

- a. During the last two months of pregnancy, encourage the mother to massage the nipples with some cold water daily. This cold water massage will toughen the skin.
- b. Show the mother how to hold her infant so his mouth is completely over the nipple and against the areola of the breast. This position will help prevent sore nipples.

BREAST ABSCESS

SYMPTOMS

Painful swelling of breast
 Later, pus may drain from abscess

SIGNS

Fever and chills
 Warm, firm, tender, reddened area on affected breast
 Later, soft, yellow area that becomes tense and bursts

PATIENT CARE

- a. Tell the mother to continue to breast-feed from the affected breast. Continued breast-feeding will aid healing.
- b. Tell the mother to apply wet, warm compresses to the affected area for thirty minutes four times a day.
- c. Treat the mother with antibiotics. Give her 500 mg of oral ampicillin every six hours for seven days.
- d. If the abscess develops a soft yellow center, see Patient Care Procedures for Opening and Draining Boils and Abscesses.
- e. Continue to soak the abscess until the drainage stops. Dress the wound with clean gauze between soaks.

PREVENTION

Abscesses may develop from cracks on nipples. Treat cracks on nipples properly.

PUERPERAL SEPSIS

SYMPTOMS

Fever and chills
 Foul-smelling vaginal discharge
 History of recent delivery, often prolonged or complicated

SIGNS

Fever and rapid pulse
 Tenderness in lower abdomen
 Foul smelling vaginal discharge, often with blood and pus
 Very tender, soft uterus

PATIENT CARE

- a. If possible, transfer the patient immediately to a hospital.
- b. If you cannot immediately transfer the patient to a hospital, treat her as follows. Place the woman at rest in a semi-seated position. Give her 1.2 g of procaine penicillin G IM every twelve hours for seven days. Give her 500 mg of streptomycin IM every twelve hours for seven days.

Encourage the patient to drink one to two glasses of fluid at least every two hours. If the patient cannot take fluids by mouth, or is vomiting, begin an intravenous infusion. Give 1000 cc of 5% dextrose in 1/2 normal saline and 1000 ml of 5% dextrose in water every twenty-four hours.

- c. If the patient does not show signs of improvement within twelve hours, you must transfer her to a hospital immediately.

PREVENTION

- a. Wash your hands thoroughly before carrying out any pelvic examination.
- b. Carry out a pelvic examination only when absolutely necessary.
- c. Wash the woman's pelvic area thoroughly before delivery or pelvic examination.
- d. Sterilize all equipment that you use during delivery.

UNREPAIRED PERINEAL TEARS

SYMPTOMS

History of recent delivery with large infant or prolonged labor
Possible application to wound of traditional medicine such as oil, leaves, herbs, or animal dung

SIGNS

Large tear possibly infected or covered with traditional medicines
With infection, fever, chills, and generalized infection

PATIENT CARE

- a. If you find evidence of generalized infection, treat the patient as if she has puerperal sep-

sis. If the wound has been packed with unclean material, give the patient tetanus toxoid in addition to penicillin and streptomycin.

- b. If you find only local infection of the wound, tell the patient to sit in a tub of warm salt water for thirty minutes three to four times a day.
- c. After several days, refer the patient to a hospital for repair of the tear. Be sure the wound is clean and free of infection before you refer the patient to a hospital.

PREVENTION

You can prevent perineal tears by using an episiotomy when the infant's head is very tight in passing through the vagina.

CARE OF EPISIOTOMY OR PERINEAL TEAR

- a. Tell the patient to keep the sutured area or tear clean and dry. Tell her that she must clean herself with soap and water after each bowel movement. Teach her the importance of cleaning herself from the front to the back. This method of cleaning herself will prevent contamination of the perineum with stool.
- b. If the tears or sutured areas are painful or swollen, tell the patient to sit in a tub of warm water for at least twenty minutes three times a day. Tell her that she may add a little salt to the water. Tell her to dry herself with a clean towel and to expose the area to the air for thirty to sixty minutes after she sits in the warm water.
- c. During postnatal examination, examine the scar carefully. If you note a shallow drainage site, look for evidence of an unabsorbed suture, and remove the suture. If you note a deeper drainage site, refer the patient to a hospital for evaluation and care.

MOTHER WITH A DEAD BABY

When the infant dies at birth, or shortly after birth, the mother often becomes depressed. She may feel that the infant's death is her fault.

PATIENT CARE

Encourage the mother to express her feelings. Talk with her and her family. Reassure them

174

that these feelings are normal and good. Support her in her plans to become pregnant again, if that is her choice. Refer the woman to a hospital if the infant death may be related to some illness or abnormality of the mother.

- b. Tell the mother to keep the infant's genital area exposed to air as much as possible.
- c. Tell the mother that she must remove the infant's diapers immediately after the infant soils them.

Common Problems of the Newborn

CRADLE CAP

SIGNS

Scaly, yellowish, greasy patches on the scalp
 Redness surrounding patches
 Possible weepy lesions behind ears, and in folds of neck, arms, and perineum

PATIENT CARE

- a. Tell the mother to scrub the infant's scalp with soap and water. Then tell her to apply 5 to 10 ml of 2.5% selenium sulfide lotion and rub the lotion into the scalp with warm water. Tell her to leave the lotion on the scalp for at least fifteen minutes, then remove it completely.
- b. Tell the mother to apply the lotion twice weekly for two weeks and then weekly for two months. Tell her not to apply the lotion to moist or weepy areas of skin.
- c. Warn the mother not to let the lotion get into the infant's eyes. Warn her to store the lotion out of reach of children. Tell her the lotion is poisonous if swallowed.

DIAPER RASH

SIGNS

Very red skin in perineal area
 Macular, papular, or vesicular rash
 Weepy and crusty rash

PATIENT CARE

- a. Tell the mother to wash the infant's genital area gently with cloth and soapy water each time the infant has a bowel movement. Tell her to rinse the area with clean water.

COLD IN THE NEWBORN

SYMPTOMS

Mother notices infant has runny nose
 Infant is irritable and has difficulty nursing

SIGNS

Clear discharge from the nose
 No fever

PATIENT CARE

- a. Show the mother how to suck mucus from her infant's nose with a rubber syringe just before feeding time.
- b. Show the mother how to put nose drops into her infant's nose after sucking the mucus from the nose. Use 0.25% phenylephrine hydrochloride nose drops. Tell her to put two to three drops in each nostril just before feeding time, up to three times a day for three days. This will help the infant breast-feed more comfortably.
- c. Do not use antibiotics. They will not be effective.

SIMPLE JAUNDICE IN THE NEWBORN

SYMPTOMS

Yellow discoloration of skin

SIGNS

Yellow discoloration of eyes
 Yellow discoloration of skin
 No other signs of illness

PATIENT CARE

- a. Tell the mother to breast-feed her infant frequently to ensure that he receives enough fluids to help the body clear the jaundice.
- b. Reassure the mother. Tell her that her baby's skin color will gradually fade. Tell her the baby will suffer no ill effects.

125

SIMPLE SWELLING OF THE SCALP AND BLEEDING INTO THE SCALP IN THE NEWBORN

You or the infant's mother may note a swelling of the scalp at the time of birth, or shortly thereafter. A soft swelling over a large area of the scalp results from fluid in the scalp tissues. Soft swelling will become smaller and disappear within 48 hours to forty-eight hours.

In contrast, a hard swelling that is usually limited to one side of the scalp results from bleeding between the skull and the scalp tissue. This swelling has a soft center and distinct edges. It will last for several weeks to a month or more. The mother may have had a difficult and prolonged labor. Or a vacuum extractor or forceps were used during delivery.

PATIENT CARE

- a. Reassure the parents that the simple swelling will disappear slowly.
- b. When the swelling results from bleeding into the scalp, the infant's brain may be damaged. Look for signs of brain injury, such as a high, shrill cry; fits; coma; or vomiting. Transfer the infant to a hospital if he has any of these signs.

Other Problems of the Newborn

FRACTURES IN THE NEWBORN

After prolonged labor, or an abnormal presentation, look for signs of a fracture. Feel each clavicle for evidence of swelling or deformity. Move each arm and leg. Observe the infant to see if he moves both arms and legs by himself. Failure to move an extremity is a sign of fracture or nerve injury.

PATIENT CARE

- a. If you detect a possible fractured clavicle or arm, splint the arm to the side of the chest and transfer the infant to a hospital.
- b. If you detect a possible fractured leg, splint the fractured leg to the other leg. Transfer the infant to a hospital for further care.

DIARRHEA IN THE NEWBORN

Normal newborns may have one soft stool after each feeding. If the stools are watery or more frequent, the infant has diarrhea. He will quickly develop signs of dehydration, including sunken fontanelle, dry mucous membranes, and tenting of the skin.

PATIENT CARE

- a. Encourage the mother to continue breast-feeding her infant. Breast-feeding is essential to the infant's health.
- b. Tell the mother to give the infant boiled water from a clean cup and spoon between breast-feedings.
- c. If the infant shows signs of dehydration, transfer him to a hospital as quickly as possible. The infant may require intravenous fluids.
- d. Tell the mother to avoid giving the newborn anything by mouth except breast milk. Tell her that if water is necessary, she must boil it and give it to the newborn by cup and spoon. Tell her never to use a bottle.

FEVER IN THE NEWBORN

Fever in the newborn is a very serious sign. Observe the infant carefully for other signs of infection such as a red umbilicus or bulging fontanelle. Look also for vomiting, weak sucking, diarrhea, irritability, sleepiness, fits, low body temperature, difficulty breathing, jaundice, pallor, and cyanosis.

PATIENT CARE

- a. Transfer a newborn with fever as quickly as possible to a hospital.
- b. If you suspect that the newborn infant has an infection, give him 250 mg of ampicillin before transferring him to a hospital.

LOW BIRTH WEIGHT

Infants who weigh less than 2500 grams at birth often have been born earlier than expected. Or their mothers were ill or poorly

176

nourished during the pregnancy. A twin often weighs less than 2500 grams at birth. The smaller the infant at birth, the greater the chance that he will not survive through the newborn period.

PATIENT CARE

- a. Immediately after birth, keep the infant warm by wrapping him in a blanket. Small infants cannot keep their body temperature normal without help.
- b. Encourage the mother to begin breast-feeding her infant within two to six hours after birth.
- c. If the infant is too small or weak to breast-feed, refer the infant and his mother to a hospital for care.
- d. If the infants are twins, teach the mother to give twin A the first chance to feed at one feeding, and twin B the first chance to feed at the next feeding. Tell her to continue to alternate feedings in this manner.
- e. If the infant has not gained weight after one week, refer the mother and her infant to a hospital for further examination and advice.

ABNORMAL JAUNDICE IN THE NEWBORN

SYMPTOMS

Yellow skin and eyes

SIGNS

Yellow skin on first day of life or after sixth day
Deep yellow color

Yellow soles or palms
Jaundice lasting more than one week
Fever or lethargy
Poor suck
Irritability

PATIENT CARE

Transfer a newborn with abnormal jaundice to a hospital for tests and treatment. Untreated forms of abnormal jaundice can cause mental retardation, and may also cause death.

PREVENTION

Refer a woman who has had one baby with abnormal jaundice to a hospital for prenatal care.

A NEWBORN WITHOUT A MOTHER

When the mother dies at the time of birth, or is unable to care for her infant, the infant is in great danger. He needs both the warmth and care of his mother, and the breast milk that she can provide.

PATIENT CARE

- a. Help to find a substitute mother for the infant. The infant needs to be held and cradled frequently.
- b. Ideally, a woman who has been breast-feeding recently can become a wet-nurse for the infant. Even a woman who has not been pregnant can begin to provide breast milk through constant sucking, forced fluids, and a strong intention to do so.

DISEASES OF INFANTS AND CHILDREN

Problems of the Newborn

TETANUS OF THE NEWBORN

SYMPTOMS

- Inability to suck
- Convulsions
- Umbilicus cut or circumcision performed with unclean instruments within past week

SIGNS

- Jaws in spasm
- Convulsions or fits set off by handling or noise
- Rigid body

PATIENT CARE

- Transfer a newborn with signs of tetanus infection to a hospital as quickly as possible.
- Before transfer, give the infant 200 mg of procaine penicillin G IM.
- To sedate the infant and reduce the likelihood of convulsions, give the infant 10 mg of amobarbital sodium IM before transfer.

PREVENTION

- Give every pregnant woman two injections of tetanus toxoid four to six weeks apart. Give these injections during the last three months of pregnancy.
- Teach birth attendants to wash their hands carefully and to use sterile equipment at deliveries. Teach them to cut and tie the umbilical cord with a sterile knife and cord.
- Teach those who perform circumcisions to use sterile instruments. Teach them to apply clean dressings to the penis.

SEPTICEMIA IN THE NEWBORN

SYMPTOMS

- Sucks poorly
- Vomiting
- Fits or convulsions

- Umbilicus possibly cut with unclean instruments
- History of complication of labor or delivery

SIGNS

- Irritability or drowsiness
- Weakness and floppiness
- Redness or foul odor around umbilical stump
- Jaundice
- Fever or low body temperature
- Signs of pneumonia or difficulty breathing

PATIENT CARE

- When you suspect that an infant has septicemia, begin antibiotics immediately. Use ampicillin if it is available. Give the infant 25 mg of ampicillin per kg of body weight IM every six hours for ten days.
- Transfer the infant to a hospital as quickly as possible. If this is not possible, continue treatment at the health center.
- Wrap the infant in a blanket to keep him warm. Infants with septicemia have difficulty keeping their body temperature from falling.
- Continue to feed the infant. If he is too weak to suck, help the mother to express her breast milk. See Patient Care Procedure for Teaching Mothers How to Express Breast Milk. Give the infants the milk with a cup and spoon. Alternatively, use a nasogastric tube. See Patient Care Procedure for Feeding a Baby by Nasogastric Tube.
- The baby requires at least 40 ml to 50 ml of fluid every three hours. If the mother produces less than 40 ml to 50 ml of milk, tell her to supplement the feeding with sugar water. Tell her to boil one-half liter of water with three tablespoons of sugar, and to cool the liquid before giving it to the infant.

PREVENTION

- Septicemia is often the result of a contaminated umbilical stump. Teach birth atten-

dants to cut the umbilicus with a sterile knife or scissors, to tie it with sterile cord, and to keep it clean.

- b. The umbilical stump should be exposed to the air to stay dry. Teach the infant's mother to paint the stump with 70% alcohol or gentian violet twice a day.
- c. Follow carefully infants who have had a difficult delivery or who have a low birth weight. Infants who are born more than twelve hours after the bag of waters has ruptured are much more likely to become infected than are other infants. Examine these infants daily for the first week of life.

INFECTED UMBILICAL CORD

SYMPTOMS

Foul smelling odor

SIGNS

Wet, draining stump
Red skin around the stump
Foul odor

PATIENT CARE

- a. Give the infant 100 mg of oral ampicillin every six hours for five days.
- b. If possible, transfer the infant to a hospital for further care. An infected umbilicus may quickly lead to infection throughout the body.

BLEEDING UMBILICAL CORD

SYMPTOMS

A small amount of bleeding occurs when the umbilical cord falls off
A larger amount of bleeding may be very dangerous

PATIENT CARE

- a. If the umbilical stump begins to bleed, press a sterile gauze dressing over the cord and keep pressure on it.
- b. If the bleeding continues for more than a few minutes, transfer the infant to a hospital. Keep pressure on the dressing over the cord while you transfer the infant to the hospital.

GONOCOCCAL CONJUNCTIVITIS IN THE NEWBORN

SYMPTOMS

Red eyes two to five days after birth
No eye care after birth
History of gonorrhea or vaginal discharge in mother
Possibly no symptoms in mother

SIGNS

Inflamed red eyes
Pussy discharge from eyes

PATIENT CARE

- a. Boil one-half liter of water with a pinch of salt and cool the solution. Then use a syringe filled with the salt solution to flush the infant's eyes. Flush the eyes from the nose outward toward the ear. Continue to flush the eyes until you have completely removed the discharge.
- b. Apply penicillin G eye ointment to the eye after you have flushed out the discharge. See Patient Care Procedure for Application of Eye Ointment or Eye Drops.
- c. Flush the eyes and apply penicillin G eye ointment every two hours for the first forty-eight hours. Frequent application is necessary because the infection washes out the medication rapidly. After forty-eight hours, put the medication into each eye every six hours until the eyes are normal.
- d. Give the infant 100 mg of procaine penicillin G IM every twelve hours for four days.
- e. Look carefully at the infant's cornea daily. If you note any roughness or evidence of corneal ulcer, refer the infant to a hospital immediately.
- f. Treat both parents for gonorrhea. Explain to the parents that the infant became infected from the mother's birth canal.

PREVENTION

Teach birth attendants to routinely place two drops of 1% silver nitrate solution in each of the infant's eyes at the time of birth. This is the most effective method of preventing eye infection. Silver nitrate will cause some redness of the conjunctivae for several days.

THRUSH IN THE NEWBORN

SYMPTOMS

Infant may suck poorly
 White patches in infant's mouth
 Mother may have itchy vaginal discharge
 Older infant may have received antibiotics

SIGNS

White or gray patches on tongue and mucous membranes of the mouth
 Raw, bleeding membranes when patches are scraped off

PATIENT CARE

- a. Swab the white patches in the infant's mouth with 1% gentian violet or nystatin oral suspension. For nystatin, use 1 ml four times a day. After you have swabbed the lesion, give the remainder of the nystatin by mouth. Demonstrate this treatment to the infant's mother. Tell her to continue the treatment until the lesions have disappeared.
- b. If a newborn develops thrush, treat the mother with nystatin vaginal suppositories. Instruct the mother to insert one tablet twice a day for three days, and then one daily for four more days. Explain to the mother that the infant was infected during birth.
- c. Avoid the use of antibiotics except when absolutely necessary. This will help to reduce the chances for thrush to develop.

Malnutrition

MALNUTRITION

SYMPTOMS

Cries and fusses
 Parents may worry that the child is not growing as he should
 Evidence of poor growth rate on the growth chart
 Child may be listless
 Repeated attacks of diarrhea
 History of any recent illness such as measles or pneumonia

SIGNS

Listless, weak, and unhappy
 Poor weight gain on growth chart
 Upper arm circumference less than 14 cm
 Marasmus
 Child very thin
 Bones stand out
 Decreased muscle mass and subcutaneous fat
 Coarse hair
 No edema of legs or face
 Child quiet and listless

Kwashiorkor

Arms very thin, less than 14 cm around
 Hair may have reddish color
 Skin rash like flaking paint
 Edema of legs and face

PATIENT CARE

Children under six months of age with mild to moderate malnutrition

- a. Encourage the mother to breast-feed her infant every three hours.
- b. Tell the mother to eat extra food so that she can produce enough milk for her infant. Body-building foods, such as beans, fish, and lentils, are especially important.
- c. Insist that the infant receive only breast milk. Tell the mother not to use bottled milk. Explain to the mother the danger of infection.
- d. If the mother cannot breast-feed her infant, show her how to use non-human milk safely. Demonstrate how to boil the milk and give it to the infant in a cup. Demonstrate how to prepare cereal or legume porridge. Tell the mother to supplement the milk with porridge three times a day.
- e. Weigh the child at least once each month, and chart the weight gain. Continue to encourage and guide the mother at each visit.

Children over six months of age with mild to moderate malnutrition

- a. Encourage the mother to continue breast-feeding her infant until the infant is more than two years of age.
- b. Encourage the mother to eat extra foods so that she can produce enough milk for her infant. Body-building foods, such as beans, fish, and lentils are most valuable.

- c. Demonstrate the preparation of porridge, using cereals and lentils. See Patient Care Procedure for Preparation of Super Porridge. Encourage the mother to supplement the infant's diet with foods such as fruit, vegetables, eggs, meat, or fish three times a day.
- d. If the mother cannot breast-feed her infant, demonstrate how to boil non-human milk and feed it to the infant with a clean cup. Insist that the mother avoid the use of a bottle.
- e. Tell the mother to continue feeding her infant when he becomes ill. Tell her to return to the health center if the child becomes ill.
- f. See the child at least once a month. Record his weight at each visit. Ask the mother what she is feeding the child. Encourage her efforts to improve her child's diet.

Children with severe malnutrition

- a. If the child is unconscious or too weak to swallow liquids or solids, transfer him to a hospital immediately.
- b. If the child has kwashiorkor or marasmus but is able to swallow liquids or solids, start treatment in his home or at the health center.
- c. The child must eat at least ten to twelve times a day. You must urge him to eat. Children with severe malnutrition have lost their appetite.
- d. If the mother can still breast-feed, encourage her to do so. The breast milk can be expressed and given by nasogastric tube if the child is too weak to suck the breast at first.
- e. Give the child at least six small feedings of porridge daily for the first week. As the child begins to improve, add extra feedings of vegetables, lentils, eggs, and other foods.
- f. If the child has Bitot's spots or night blindness, give him vitamin A.
- g. Weigh the child each day. The child with marasmus should begin to gain weight. If he loses weight or develops a respiratory infection, transfer him to a hospital. A child who is recovering from kwashiorkor will lose weight as the edema decreases. Then he should begin to gain weight. If the child with kwashiorkor gains weight over the first three or four days of treatment, transfer him to a hospital.

Children who are recovering from severe malnutrition

- a. Help the parents to understand the cause of their child's illness. Encourage them to increase the amount and the variety of foods that they give to their children.
- b. Encourage the parents to prepare porridge from cereals and lentils. Tell them that this is a valuable food for children who are malnourished. Tell them that it is also valuable for healthy children until they are old enough to eat the family foods.
- c. See the child each week and weigh him. When his weight has returned to the normal range, continue to see him monthly.
- d. Instruct the parents to feed their child when he becomes ill. Tell them that illness is not a reason to stop feeding the child.
- e. If more than one malnourished child from the same community requires treatment, see the children together. Teach the parents how they can improve their children's diets. Demonstrate the preparation of super porridge.

Diarrhea and Dehydration

DIARRHEA AND DEHYDRATION

SYMPTOMS

- Five or more loose or watery stools a day
- Possible cramps
- Possible blood and mucus in stools

SIGNS

- Mild Dehydration
 - Restlessness
- Moderate Dehydration
 - Dry lips and mouth
 - Anterior fontanelle sunken in child under six months of age
 - Increased pulse and respiratory rate
- Severe Dehydration
 - Skin tenting
 - Sunken eyes
 - Sunken anterior fontanelle

PATIENT CARE

Children with mild dehydration or diarrhea without signs of dehydration

181

- a. Teach the mother how to prepare oral rehydration fluid. See Patient Care Procedure for Preparation and Use of Oral Rehydration Fluid.
- b. Encourage the mother to continue breast-feeding her infant. Tell her to give the infant the oral rehydration fluid between breast-feedings.
- c. If the child is not breast-feeding, tell the mother to feed him soft foods and liquids until his stools begin to become less watery and loose.
- d. Look for signs of infection elsewhere in the body. Treat infection according to the type of infection it is. Do not use drugs except for specific infections.
- e. If the child has a fever, bring the temperature down. See Guide for Reducing Fever.
- f. If the child has signs of malnutrition, begin treatment for this condition as soon as possible.
- g. Tell the mother to bring her child back to the health center immediately if the diarrhea continues or vomiting develops.
- h. Before the child leaves the health center, be sure that the mother can prepare the oral rehydration fluid properly. And be sure that the child is taking fluids by mouth. Be sure that the mother knows how much fluid to give her infant and how often to give it.

Children with moderate to severe dehydration

- a. Give the child oral rehydration fluid immediately. Give him 20 ml of fluid for each kg of body weight over the first two hours. Continue to give the child this amount of fluid every two to three hours until the signs of dehydration have disappeared.
- b. If the child is vomiting or refuses to take fluids by mouth, begin an intravenous infusion. See Patient Care Procedures for Scalp Vein or Peripheral Vein Intravenous Rehydration.
- c. When you have started an IV, use Ringer's lactate or 5% dextrose in 1/2 normal saline. Give the child 20 ml for each kg of body weight as rapidly as possible. If the child still appears dehydrated, repeat this amount of fluid over the next thirty minutes.

- d. If the child continues to have diarrhea and will not take sufficient fluid by mouth, continue the intravenous. Use the following table as a guide for replacement of fluids.

WEIGHT OF CHILD	AMOUNT OF INTRAVENOUS FLUID
15 kg and over	100 ml per hour
10 to 15 kg	75 ml per hour
5 to 10 kg	50 ml per hour
Under 5 kg	25 ml per hour

- e. Do not give too much intravenous fluid. Watch the infant carefully for swelling around the eyelids. This swelling is an early sign of too much fluid. If swelling occurs, remove the intravenous needle. Continue to give fluids by mouth.
- f. Look for evidence of malnutrition. Begin treatment of this condition as soon as possible. Encourage the mother to continue to breast-feed her infant during the diarrhea illness.
- g. As soon as the child is rehydrated and the diarrhea improves, encourage the mother to begin giving her child appropriate foods.
- h. Teach the mother how to prepare and use oral rehydration fluid while the infant is being rehydrated. Be sure that the mother knows how to prepare and use the fluid before you send the child home.

PREVENTION OF DEHYDRATION

- a. Teach mothers that diarrhea quickly leads to drying out of the body.
- b. Teach mothers the dangers of diarrhea and dehydration.
- c. Show mothers how to prepare oral rehydration fluid and how to use the fluid when the child develops diarrhea.
- d. Urge mothers to continue to breast-feed their infants when the infants develop diarrhea.

PREVENTION OF DIARRHEA

- a. Encourage mothers to breast-feed their infants until the infants are two to three years of age.
- b. Explain the dangers of using a bottle in infant feeding. Demonstrate the use of a clean cup and spoon when the mother must feed the infant non-human milk.

182

- c. Teach mothers to boil all water that they give to their infants
- d. Encourage mothers to wash their hands and their children's hands before eating and after using the latrine.
- e. Encourage mothers to wash all fruits and vegetables before feeding them to their children. Washing is most important when the mother gives the child raw fruits and vegetables.
- f. Encourage cleanliness in the home and the use of latrines.

- e. Encourage the mother to keep the child as quiet and calm as possible. Tell her that crying increases the stridor and difficulty breathing.
- f. If the child has a fever, reduce the fever with sponging. See Guide for Reducing Fever.
- g. If you cannot transfer a child with severe croup to a hospital, treat him with oral ampicillin or chloramphenicol. See Guide for Calculating Antibiotic Dosages. A virus causes the less severe form of croup. Therefore, antibiotics are not necessary.

Common Infections of Children

CROUP

SYMPTOMS

Recent cold and sore throat that suddenly became worse
 Barking cough
 Hoarseness

SIGNS

Stridor when breathing in
 Difficulty in breathing air into lungs
 Intercostal retractions

PATIENT CARE

- a. If the epiglottitis is swollen and red, transfer the child to a hospital immediately. His airway will become completely obstructed in a few hours. He will require a surgical opening in his throat.
- b. In the less severe type of croup, airway obstruction is less likely to occur. If the child has severe stridor, keep him at the health center. Take his pulse every two hours and examine him for evidence of cyanosis. If his pulse rises above 140 or he becomes blue, transfer him to a hospital.
- c. Tell the child's mother to increase the water vapor in the air. Tell the mother to hang wet towels near the bed and place a fan behind the towels. A steam kettle near the bed may be dangerous. However, it can increase the water vapor in the air.
- d. Tell the mother to give the child extra fluids. Tell her to offer the child a glass of water or other liquid every two or three hours.

WHOOPING COUGH

SYMPTOMS

Difficulty breathing
 History of choking on mucus and vomiting
 History of cold that gradually worsened over one to two week period
 Coughing that becomes more frequent and more severe

SIGNS

Thick mucus in nose and throat
 Whooping after attacks of coughing

PATIENT CARE

- a. Choking on thick mucus is a serious problem. Tell the mother to lay the child on his side. Show her how to hold the child with his head down while patting him on the back. This treatment may help to loosen the mucus and prevent choking.
- b. When the child is breast-fed, encourage the mother to feed the infant more often than normal. The infant is often weak and unable to suck properly. He is very likely to lose weight and become malnourished.
- c. Encourage the parents of an older infant to feed him more often than normal. Tell them to give the child soft food. Tell them to give the child smaller portions more frequently. Tell them to feed the child again if he vomits the food.
- d. Weigh the child and treat him with oral ampicillin. See Guide for Calculating Antibiotic Dosages. Continue antibiotic treatment for seven days.

- e. Watch carefully for signs of pneumonia. If pneumonia develops, treat the infant for this condition. See Patient Care Guide for Pneumonia.

PREVENTION

Give every infant a course of three combined DPT shots at three, five, and seven months. Follow these shots with a booster shot a year after the last of the three basic injections.

MEASLES

SYMPTOMS

Rash that spreads from face to rest of body
History of recent fever, red eyes, runny nose, and cough

SIGNS

Fever, runny nose, red eyes, cough
White spots with a red base on inside of cheeks
Rash on face and body
Rash that runs together after few days

PATIENT CARE

- a. Encourage the mother to give her child extra fluids. Tell her that one glass of water or juice every two hours will help to prevent dehydration.
- b. Tell mothers to continue to breast-feed their infants. Tell them to give older children extra feedings. Measles is far more dangerous when the child is malnourished.
- c. Reduce the fever with sponging and aspirin. See Guide for Reducing Fever. Teach the mother how to bring the fever down at home.
- d. If a small infant is unable to suck or swallow adequately, transfer him to a hospital for care.
- e. Examine the child daily. Look for signs of pneumonia, ear or throat infections, diarrhea, or dehydration. Treat these conditions according to Patient Care Guides.
- f. If the child becomes very ill, transfer him to a hospital. Children with measles who develop convulsions, severe skin rashes, or severe dehydration are likely to die. When they are malnourished, they are also likely to die from measles.

PREVENTION

You can prevent measles by giving measles vaccine to the children in your community. Measles vaccine is most effective when given to children who are nine to twelve months of age. If the child has had measles vaccine before nine months of age, repeat the immunization at a subsequent visit. The vaccine may not be effective in younger infants.

MUMPS

SYMPTOMS

Pain when chewing
Swelling of jaws
No history of mumps

SIGNS

Swollen, tender, and firm parotid salivary glands

PATIENT CARE

- a. Mumps is a virus infection. No treatment is available to cure mumps.
- b. Give the patient aspirin to reduce the pain and discomfort. Give him 60 mg for each year of age, up to ten years. Give children over ten years 600 mg of aspirin every four hours.
- c. Warm or cold packs against the cheek may give the patient some comfort.
- d. Advise the mother to prepare liquid or soft foods that require little or no chewing.

CHICKEN POX

SYMPTOMS

Red rash on chest and abdomen
Mild headache, fever, and loss of appetite

SIGNS

Red macules on chest and abdomen that develop into vesicles and then lesions with scabs
Possible infection of skin lesions caused by scratching

PATIENT CARE

- a. No treatment will cure chicken pox. The illness is caused by a virus.

184

- b. Teach the mother to prevent infection of the skin rash by washing the child with soap and water daily. Teach her to cut his fingernails short and keep them clean. Tell her that when the child scratches his skin, he will be less likely to cause an infection if he has short, clean fingernails.
- c. If the child develops impetigo with fever, give him procaine penicillin G IM twice a day for five days. See Guide for Calculating Antibiotic Dosages. Also teach the mother how to apply warm soaks to the skin lesions until the skin lesions dry up.

Problems of Infants and Children

POLIOMYELITIS

SYMPTOMS

- Fever and stiff neck
- Sudden weakness of arm or leg
- Severe muscle cramps and spasms followed by paralysis of affected arm or leg

SIGNS

- Inability to move affected arm or leg
- Decreased or absent reflexes in affected limb

PATIENT CARE

- a. Keep the patient as comfortable as possible. Give him fluids every few hours. Give him aspirin every four hours to ease his discomfort. Transfer the patient to a hospital.
- b. While the patient is recovering from the acute illness, move all of the involved joints through a full range of motion many times each day. Encourage the patient to cooperate. He must try to make the same movements himself. In this way, you can help to prevent deformity. Often, the patient will regain some strength in muscles that have weakened during the acute illness.
- c. Teach the family how to work with the patient. Teach them to help the patient move all of his joints by making the movements for him and encouraging him to participate. Tell them to continue this work over many months.

PREVENTION

Oral polio vaccine, given during early infancy, will protect children from paralysis. Immunization of the entire community is the most effective way to prevent poliomyelitis.

RHEUMATIC FEVER

SYMPTOMS

- High fever, tiredness, and weakness
- Swelling and pain in one or more large joints
- History of tonsillitis within past two or three weeks

SIGNS

- High fever
- Weakness
- Swollen, red, and tender large joints
- Inflammation that moves from joint to joint
- Possible heart murmur

PATIENT CARE

- a. When you suspect that the patient has rheumatic fever, refer him to a hospital. You must confirm the diagnosis.
- b. A child with rheumatic fever requires rest. Encourage the parents to keep the child in bed as much as possible. Tell them to restrict the child's physical exertion until the fever is completely gone.
- c. Aspirin in large doses can reduce the fever and the joint swelling and inflammation. However, you must give large doses of aspirin. Weigh the child. Multiply his body weight by 130 mg to obtain the recommended daily dose of aspirin. Then divide this dosage into four to six smaller doses.
- d. The toxic effects of aspirin include ringing in the ears, nausea, and vomiting. If these symptoms develop, reduce the dose of aspirin.
- e. Continue the aspirin for a total of ten weeks. Then gradually reduce the dosage over a period of one week. If symptoms of fever or joint pain return, continue the aspirin for another four weeks.
- f. If the child has a high fever, bring the fever down by sponging the child. Demonstrate this technique to the parents.

- g. Give the child penicillin V four times a day for ten days. Alternatively, give the child one injection of benzathine penicillin. See Guide for Calculating Antibiotic Dosages.

PREVENTION

A child who has had one attack of rheumatic fever is very likely to get a second. You can reduce this risk by giving the child 1200 mg of benzathine penicillin IM once a month. You may substitute either 250 mg of penicillin V daily or 1 g of sulfadiazine daily. You should continue treatment until the patient is twenty years of age. By preventing rheumatic fever you can also prevent rheumatic heart disease.

- Give an adult 2000 ml per day of fluid. Give children 50 ml per kg of body weight per day.
- b. Give the patient aspirin for relief of pain. Give 60 mg for each year of age up to ten years. Give children ten and older the standard adult dose of 600 mg every four hours.
- c. Look for evidence of pneumonia or infection in the bone. These complications occur frequently. If you suspect one of these complications, refer the patient to a hospital. If the patient is in very severe pain, transfer him to a hospital.
- d. Pregnant patients with sickle cell anemia require extra folic acid. Give the patient 5 mg of folic acid daily throughout pregnancy and lactation.

SICKLE CELL ANEMIA

SYMPTOMS

Severe pain in bones, joints, abdomen, or chest
 History of anemia and sickle cell crises
 Poor growth

SIGNS

Enlarged, tender finger and toe joints
 Jaundice
 Anemia
 Enlarged liver and spleen during early childhood
 Long slender limbs and short trunk

PATIENT CARE

- a. When the patient has a severe attack of pain, he requires a large amount of fluid. Encourage him to drink a glass of liquid every hour. If he is having severe abdominal pain or vomiting, start an intravenous infusion and give him 5% dextrose in 1/2 normal saline.

OSTEOMYELITIS

SYMPTOMS

Sudden onset of high fever, chills, and extreme sickness
 Throbbing pain in the infected bone

SIGNS

Tenderness over infected bone
 Child refuses to use affected extremity
 Swelling, redness, and heat over infected bone

PATIENT CARE

- a. When you suspect that the patient has an infection in his bone, refer him to a hospital immediately. He will require very high doses of antibiotics IM or IV for several weeks. He may require surgery.
- b. Splint the arm or leg that is infected. This will provide some comfort to the patient while he is on his way to the hospital.

186

CHILD SPACING

Natural Methods

ABSTINENCE

If a woman does not have intercourse, she will not become pregnant.

MALE WITHDRAWAL

The man withdraws his penis from the woman's vagina before he ejaculates.

ADVANTAGES

Simple and inexpensive
Requires no equipment or supplies

DISADVANTAGES

Requires self-discipline
May reduce the couple's satisfaction with intercourse
Even if the timing is correct, the couple risks pregnancy because some sperm may be present in the moisture at the tip of the penis before the man ejaculates

LACTATION

Breast-feeding after giving birth, especially before menstruation has returned, reduces the woman's chances of becoming pregnant.

ADVANTAGES

Requires no training or equipment

DISADVANTAGES

Unreliable
Woman can become pregnant before her first postpartum menstruation

MUCUS OVULATION

The woman learns to recognize the quality and quantity of vaginal mucus in order to avoid intercourse during her fertile period.

ADVANTAGES

No side effects

DISADVANTAGES

Unreliable
Even when the woman practices the method correctly, the couple risks pregnancy
Strictly limits intercourse unless the couple uses a different method of child spacing during the woman's fertile period

PATIENT INSTRUCTIONS

1. Immediately after menstruation, begin checking the mucus in your vagina.
2. First, wash your hands and clean your fingernails.
3. Then, reach into your vagina and remove some mucus for examination.
4. In some cycles, you may find no noticeable mucus for one or more days after menstruation. Your vagina will feel dry.
5. As the cycle progresses, you will find cloudy, tacky mucus.
6. As ovulation approaches, the mucus increases and becomes clear, slippery, and stretchy, like raw egg white. The mucus may stretch 2 cm to 10 cm. Days when the mucus looks like this are called peak days.
7. Ovulation occurs within twenty-four hours after the last peak day ends.
8. From the first sign of mucus until the fifth day after ovulation, you are most fertile. You should avoid intercourse during this period, unless you use another method of child spacing.
9. Your unfertile time begins the fifth day after ovulation and continues through menstruation. If you find mucus during this period, it will be cloudy and tacky. You may resume unprotected intercourse during your unfertile time.
10. To determine your fertile time more accurately, use a combination of Mucus Ovulation, Rhythm, and Temperature Change methods.

RHYTHM

The couple has intercourse only during the periods of the month when the woman is not likely to be fertile. During the woman's fertile period, the couple may choose to abstain or to use a different method of child spacing.

ADVANTAGES

Requires no pills or mechanical aids
Helps a woman to become more aware of her body's natural cycles

DISADVANTAGES

Unreliable
Ineffective if the woman does not use the method properly
Even when the woman uses the method properly, she risks pregnancy
Less reliable if the woman ovulates irregularly

PATIENT INSTRUCTIONS

1. Record the first day of each menstrual cycle for twelve cycles.
2. Subtract 18 from the number of days in your shortest cycle. The resulting number is the first day of your fertile period.
3. Subtract 11 from the number of days in your longest cycle. The resulting number is the last day of your fertile period.
4. For example, if your shortest cycle is 27 days, $27 - 18 = 9$. If your longest cycle is 34 days, $34 - 11 = 23$. Your fertile period is from day 9 through day 23 of your menstrual cycle.
5. When you have determined your fertile period, you should avoid intercourse during this period, unless you use another method of child spacing.
6. To determine your fertile period more accurately, use a combination of Mucus Ovulation, Rhythm, and Temperature Change methods.

TEMPERATURE CHANGE

Normally, a woman's body temperature drops slightly at the time of ovulation. Then her temperature rises throughout the remainder of the menstrual cycle. To detect the changes in

body temperature, the woman must use a special thermometer that measures temperature change in 1/10th of a degree intervals.

ADVANTAGES

No side effects

DISADVANTAGES

Unreliable
The woman cannot use temperature to determine safe days before ovulation
Infection or illness can cause a temperature rise that is not related to ovulation

PATIENT INSTRUCTIONS

1. Write down your temperature immediately after waking, before you eat, drink, or smoke. Keep the thermometer under your tongue with your mouth closed for four to five minutes before you record your temperature.
2. The fourth day after your temperature rises is the beginning of your unfertile period.
3. To determine your fertile period more accurately, use a combination of Mucus Ovulation, Rhythm, and Temperature Change methods.

Chemical and Barrier Methods

SPERMICIDES

The woman inserts spermicidal foam, cream, or jelly into her vagina to kill the sperm directly. The spermicide also blocks the sperm from entering the uterus through the cervix. Foams, creams, and jellies are not sufficient child spacing methods when used alone.

ADVANTAGES

Easy to use
No examination necessary

DISADVANTAGES

Not sufficient when used alone
May irritate the vagina or the penis
May be expensive

PATIENT INSTRUCTIONS

Spermicidal cream or jelly

1. Use spermicidal cream or jelly in combination with a diaphragm.
2. Place spermicidal cream or jelly in the dia-

phragm cup before inserting the diaphragm.

3. Insert the diaphragm within two hours before intercourse.
4. Leave the diaphragm in place for six to eight hours after intercourse.

Spermicidal foam

1. Use spermicidal foam in combination with a condom.
2. Use two full applicators of spermicidal foam each time you have intercourse.
3. Insert the spermicidal foam within fifteen minutes before intercourse.
4. Leave the spermicidal foam in your vagina for six to eight hours after intercourse.

CONDOMS

A condom is a thin rubber sheath that fits over the penis and prevents semen from entering the vagina. The man must put on a new condom for each intercourse.

ADVANTAGES

Inexpensive, readily available, easy to use
Provide some protection against problems spread by sexual contact

DISADVANTAGES

Putting condom on just before inserting the penis may disrupt the mood
Condom makes the man's penis less sensitive
If condom is not lubricated, it may irritate the woman's vagina

PATIENT INSTRUCTIONS

1. Use spermicidal foam in combination with a condom.
2. Never use petroleum jellies such as petrolatum ointment as a lubricant. Such jellies cause the condom to weaken and tear.
3. Roll the condom onto the erect penis before the penis is in the vagina, not just before ejaculation.
4. Use a new condom for each intercourse.
5. Store condoms away from heat.

DIAPHRAGM

A diaphragm is a shallow, soft rubber cup. The

woman inserts a diaphragm into her vagina so that it fits closely over the opening to the cervix. When properly fitted and inserted, the diaphragm acts as a barrier against sperm.

ADVANTAGES

No side effects or dangers when diaphragm is properly inserted
Very effective when used with spermicidal jelly or cream

DISADVANTAGES

Must be inserted before each intercourse
Insertion requires clean water and facilities

PATIENT INSTRUCTIONS

See Patient Care Procedures for Finding the Correct Size Diaphragm for a Woman, and for Teaching a Woman to Use a Diaphragm.

INTRAUTERINE DEVICES (IUDs)

The woman has a small metal or plastic device inserted into her uterus. The woman leaves the IUD in place as long as the couple desires to have protection from pregnancy.

ADVANTAGES

Effective method of contraception
Easy to remove when the couple wants to have another baby

DISADVANTAGES

Can tear a hole in the uterus if not inserted properly
Unsterile IUD insertion can lead to infection in the uterus
In some women, will not remain in place, creating possibility of unwanted pregnancy
Sometimes causes low backache, cramps, and increased menstrual bleeding
Possible painful insertion, especially if the woman has never been pregnant

PATIENT INSTRUCTIONS

See Patient Care Procedures for Inserting an Intrauterine Device (IUD), and for Removing an Intrauterine Device (IUD).

WARNING

Do not insert an IUD if you detect any of the following problems:

Any history of painful menstruation, heavy

- bleeding during menstruation, or bleeding between menstrual periods
- Any history of gonorrhea or severe pelvic infection
- Any history of heart disease
- Any history of anemia
- The woman has sickle cell disease
- The woman is pregnant or appears to be pregnant
- The woman is suffering from vaginitis or infection of the womb
- The woman has an inflammation of the cervix or fibroid tumor in the uterus

ORAL CONTRACEPTIVES

Each day the woman takes a pill that contains artificial sex hormones. These hormones prevent her ovaries from producing eggs. When the ovaries do not produce eggs, the woman cannot become pregnant.

ADVANTAGES

When the woman takes the pills regularly, the couple has almost complete protection from unwanted pregnancy

DISADVANTAGES

Side effects include nausea, blood clots in the legs, increased blood pressure or hypertension, headaches, increased blood sugar, vaginal bleeding or staining between menstrual periods, increased irritation or depression, weight gain from retention of water, and darkening of the skin

PATIENT INSTRUCTIONS

1. Take one pill at the same time every day.
2. Begin with the first white pill, five days after your menstruation begins.
3. Take one pill every day, following the line on the packet.
4. Take all of the white pills before you start taking the brown pills.
5. You will probably start to menstruate while you are taking the brown pills.
6. Continue taking a pill every day until you have finished the packet.
7. Two days before you finish the first packet, return to the clinic for more packets and a follow-up visit.
8. Start a new packet, beginning with the first

white pill, the day after you finish the old packet.

9. If you forget to take a pill for a day, take that pill as soon as you remember it. Also take the regular pill for that day. If you forget to take pills for two days, use another method of child spacing for the rest of that month. However, continue to take one pill a day until you finish the packet.

FOLLOW-UP

1. See the woman two days before she finishes the first packet of pills. Ask her to explain to you how she has been taking the pills. Make sure she is taking them correctly. If she has stopped taking them, perhaps another method of child spacing would be better for her.
2. If the woman has had no problems, give her a three-month supply of pills.
3. If the woman has had any serious side effects, refer her to a hospital. Refer her if she has had any pain in her legs, any swelling, any severe headaches, or any difficulty with her vision.
4. Each year that the woman is taking oral contraceptives, take a medical history and carry out a complete physical examination, including a pelvic examination.

WARNING

Do not prescribe oral contraceptives if you detect history of any of the following problems:

- Blood clots or inflammation of leg veins
- Breast lumps or breast cancer
- High blood pressure
- Severe headaches
- Liver disease or jaundice
- Heart disease, including rheumatic heart disease
- Cancer of the uterus or cervix
- Unexplained vaginal bleeding for more than one week

Permanent Methods

VASECTOMY

A vasectomy is a small operation to cut the tubes that carry sperm to the penis.

ADVANTAGES

Quick and simple

No effect on man's sexual desire or ability to have intercourse

No other method of contraception necessary

DISADVANTAGES

Some initial discomfort and risk of infection

Permanent method of contraception

PATIENT INFORMATION

1. Be sure the man does not want any more children.
2. Be sure the man understands that a vasectomy will not make him weak. Assure him that the operation will not change his sexual behavior.
3. Advise the man not to ride a bicycle or a horse for a week after the operation. Advise him not to do any heavy work for a week after the operation.
4. Advise the man not to have intercourse for one week after the operation. Advise him to use a condom or some other child spacing method for the first fifteen times that he has intercourse after the operation. Tell him that after the first fifteen times he will no longer need to use any contraceptive methods or devices.

TUBECTOMY

A tubectomy is a small operation to cut the tubes that carry the eggs from the ovaries to the uterus. The best time for a woman to have a tubectomy is one to three days after she has a baby. However, a woman can have a tubectomy at any time.

ADVANTAGES

Quick and simple

No other method of contraception necessary

DISADVANTAGES

Some initial discomfort and risk of infection

Permanent method of contraception

PATIENT INFORMATION

1. Be sure the woman understands that a tubectomy is a permanent method of contraception.
2. Tell the woman a tubectomy will not have any effect on her ability to enjoy intercourse. Tell her she will continue to menstruate.
3. Advise the woman not to have intercourse until the incision has healed.
4. Advise the woman not to do any heavy work for a week or two after the operation.