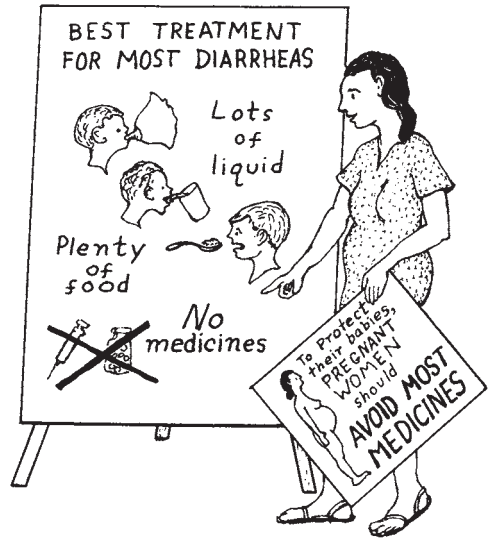
Learning to Use Medicines Sensibly

CHAPTER **18**

Helping health workers learn to use medicines is not easy. This is not just because the knowledge and skills needed can be difficult. It is also because the misuse and overuse of medicines is so common—among doctors, health workers, and people in general. Throughout the world, doctors and health workers may give medicines that will not work for an illness, give medicines when they are not safe to use (such as during pregnancy when they can harm a developing baby), or recommend expensive medicines when cheaper ones would work just as well. Giving antibiotics to fight infections they do not work against, such as viruses, is an especially common problem (see *WTND*, pages 163 and 350). People may take medicines incorrectly, take too many medicines at the same time, or expect to be given medicines when they are not appropriate.



Because the overuse of medicine is such a big problem in many areas, health workers should place great emphasis on when **not** to use medicines.

Health workers should discuss these facts and help make <u>everyone</u> aware of them.

SOME REASONS MEDICINES ARE USED INCORRECTLY:

1. Big business. The production and marketing of modern medicines is one of the biggest, most profitable businesses in the world. Drug companies are continually inventing new products to increase their sales and profits. Some of these medicines are useful while others are not. Doctors prescribe them, and people buy them, because the drug companies spend millions on advertising.

2. Misleading and inadequate information. Advertising and even information published about medicines in medical journals can be misleading or false. Information on dangerous side effects is often excluded or minimized, so risky medicines are recommended for minor illnesses (for example, chloramphenicol—an antibiotic with known severe side effects—has been advertised as a treatment for minor diarrhea and respiratory infections when less dangerous medicines would work). Often, neither doctors nor the public are adequately informed about the correct use of medicines, and in some cases, advertising may be their main source of information. Many doctors rely on the information supplied with sample medicines, while people who "self-medicate" (see next page) often receive no information at all.

3. Medicine as a source of prestige. Some professionals may use their ability to give medicines as a way make people feel grateful and dependent. This gives the professional special privilege and power. In the same way, health workers may be tempted to give injections or expensive drugs when information and resources would be more appropriate and helpful.

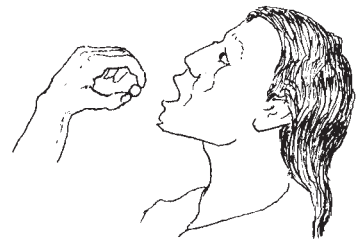
4. Lack of stable care. In many places, people cannot get health care because they live far from health services or do not have money. Even if they can get care, they may not always see the same health worker or have access to their own medical records. So a health worker may not know all the medicines a person is already taking before prescribing new ones. This can lead to someone unnecessarily taking multiple medicines that do the same thing or taking medicines that should not be used at the same time.

5. Multiple health conditions. As someone develops more health problems, they are often given more medicines to manage each new condition. This is especially common as people grow older. When people take more medicines, they are more likely to take them incorrectly.

6. Unclear instructions. When health workers give a medicine to treat a health condition, they may not give clear instructions about how to take the medicine, or may not give the information in a way the person understands (for example, spoken vs. written instructions). What precautions should the person take when using the medicine? Should they take the medicine every day or only when a specific symptom happens (such as difficulty breathing)? Should they stop the medicine when they feel better or should they use the medicine until it is finished? Is this a medicine they will take for a short period of time or for the rest of their life?

7. People's expectations. Because the problem of misleading and inadequate information about medicines is widespread, people may have incorrect expectations when they go for healthcare. If a person has seen a lot of advertising for medicines, or is used to always being given medicines, then they may come to expect medicine every time they visit a doctor or health worker. They will be upset or confused if they are not given medicine, even when the health worker carefully explains why medicines will not help. Doctors and health workers may get into the habit of always giving medicine, creating a belief that "there is a medicine for everything." This can cause a "vicious cycle" in which the doctor always gives medicine because the patient always expects (or demands) it, because the doctor always gives it.

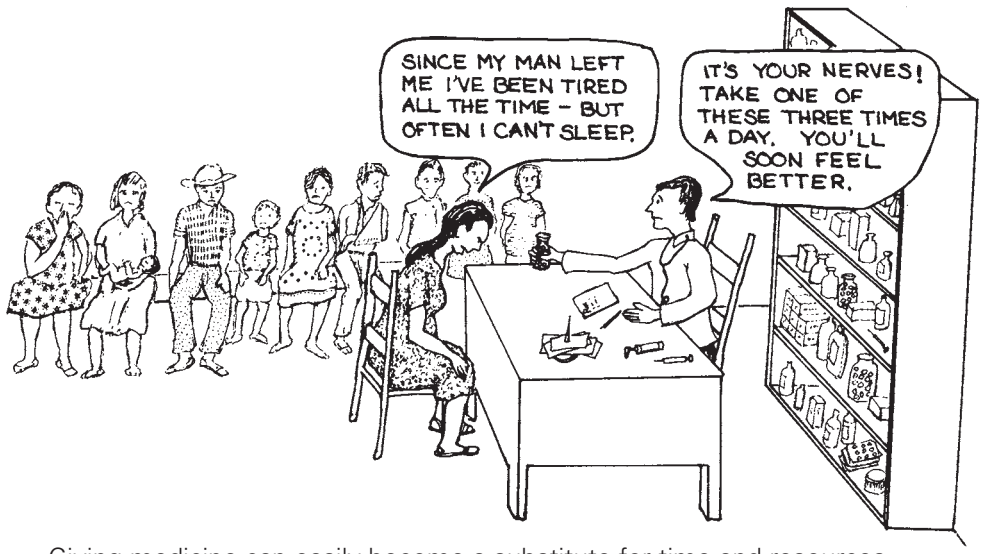
THE VICIOUS CYCLE THAT LEADS TO THE OVERUSE OF MEDICINE



8. "Self-medication." The use of medicines to self-treat health problems is common throughout the world. A person may recognize signs of illness and choose a non-prescription medicine on their own, or self-treat a condition previously diagnosed and treated by a health worker. Where medicines are widely available without a prescription, the person may self-prescribe more restricted medicines. Self-medicating minor conditions with non-prescription medicines that are used correctly can be beneficial. But in other cases, self-medicating may cause a person to delay seeking care from a health worker, or prevent them from getting an accurate diagnosis because their symptoms are reduced. And self-prescribing can be especially risky. While people who self-prescribe may try to use medicines correctly, they likely receive little or no information on how to do this.

9. Health workers not adequately trained. Although learning to prescribe medications is a common part of training for physicians and health workers, they are rarely taught to do medication "check-ups" to review all of the medicines a person is currently using (to understand if they are still needed). Providers are also not usually taught to "deprescribe"—to determine when it is appropriate to take someone off a medicine and how to safely do this.

10. Health workers not adequately resourced. In many parts of the world, doctors and health workers often do not have the resources they need to care for people—including enough time to spend with each person or access to other resources patients need, like food and housing. While the most helpful thing is often supportive, understandable information, a health worker may only have the time or ability to give a medication due to the limitations of the system they work in. The result is not only a costly overuse of medicine, but a failure to meet human needs on human terms.



Giving medicine can easily become a substitute for time and resources—especially when long lines of people are waiting. You may want to show your students a picture like the one above, or have them act out the scene in a role play. Then let them figure out reasons for the situation, other ways it could be approached, and how to work for change.

HELPING HEALTH WORKERS LEARN ABOUT THE MISUSE OF MEDICINE IN THEIR AREA

If health workers are to help stop the overuse and misuse of medicines, they must understand the problem clearly and recognize its cost to human health. But it is not enough simply to give them information. **They need to find out for themselves just how serious the problem is in their own area.** And they need to learn ways to help inform the people who come to them "for medicine."

1. Finding out the extent of the problem

Perhaps you can help health workers to compare their own experiences or take simple surveys. They can investigate questions like these:

How many prescription medicines do people in the community buy and use without a prescription?

In Mexico, a group of health workers-in-training made a survey in 5 pharmacies in a nearby city. They found that nearly 80% of prescription drugs were sold without prescription. Perhaps your students can conduct a similar survey.

How often do doctors prescribe too many medicines or the wrong medicine?

Often people come to a health center with prescriptions from doctors in other places. With the help of instructors, students can keep a record of how many prescriptions appear to be inappropriate.

What evidence is there of physical harm caused to people by overuse or misuse of medicines?

Students can keep a record of problems—such as drug resistance—caused by overuse of antibiotics, abscesses caused by unsafe injections, deaths or harm to women and babies that may have been caused by medicines injected to speed up birth, etc.

What evidence is there of economic harm to people caused by the overuse and misuse of medicine?

Students can try to find out how much poor families spend on health care and medicines (both traditional and modern). Then try to estimate how much of this is spent on useless or harmful treatments. Is it worth it? Could health be improved if the money were spent differently?

How often do health workers, doctors, or instructors in the health center appear to give medicine simply to please people—not because it is necessary?

We all do it sometimes. Admit it! Discuss it. Is it ever right to give medicine when it is not needed? How does doing this create false beliefs, dependency, and mystification of medicine?

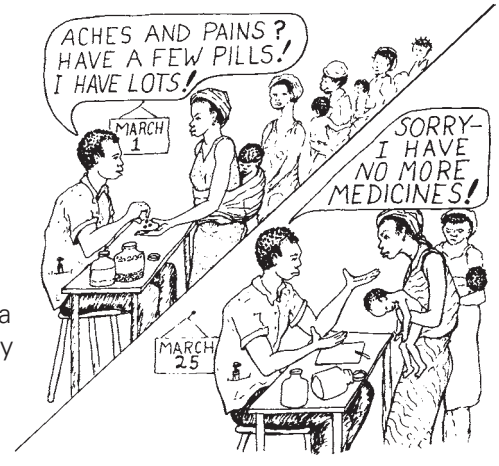
Many programs give out colorful cough syrup and anti-diarrhea medicine, both of which are unnecessary, in order to attract mothers to the under-fives clinic. Is this wise?

2. Looking at the causes of local misuse of medicines

The larger causes—national, international, commercial, and professional—are mostly out of the health workers' control. Yet health workers need to be aware of these causes and discuss how they affect the overuse and misuse of medicines in their own communities. Helping people become aware of the high profits and dishonesty of the medicine business may lead them to more careful and critical use.

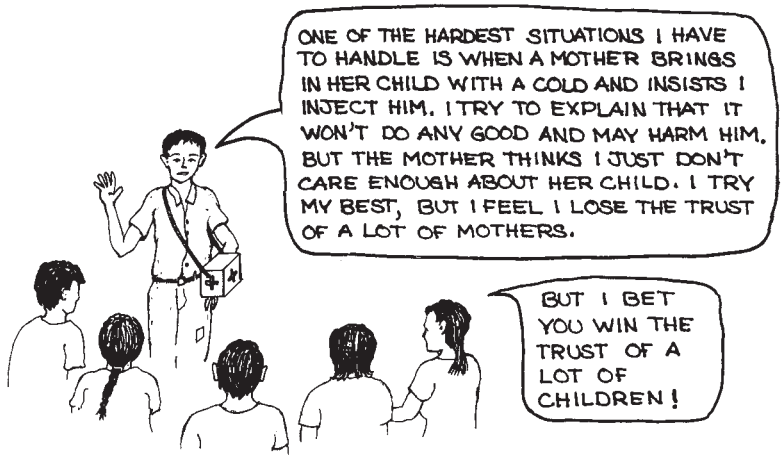
The more immediate personal causes of misuse and overuse of medicines are things health workers can do more about.

Perhaps the biggest personal cause of medicine misuse by health workers is "popular demand." We know of health workers who feel they have to give at least 2 or 3 pills to every patient—no matter what his problem. As a result, these health workers regularly use up their monthly supplies of chloroquine (for malaria) and sulfa in the first week or so. This means that many people who really need those medicines must go without!



Overuse of medicines, where the supply is limited, causes increased illness and death.

Health workers need to look at these things carefully. Health workers-in-training may not realize how great the temptation can be to give medicine needlessly. It helps to **invite experienced health workers to talk with those in training about the difficulties and obstacles they have run into.**



Experienced health workers can help prepare health workers-in-training for the difficulties and disappointments they may encounter in their communities.

3. Trying to solve the problem

During training, a number of steps can be taken to discourage the misuse and overuse of medicines:

- **Set a good example.** Program doctors, nurses, and instructors, when attending the sick, should take great care to use medicines only when needed. Encourage the use of helpful home remedies. Whenever anyone gives medicine as a substitute for caring, point this out and discuss it in class.
- Through **role plays and sociodramas,** students can explore the pressures and temptations to overuse medicines, and ways to resist them. **Imaginative teaching aids** (such as the antibiotic learning games in the next chapter) also help health workers discover the need for cautious, economic use of basic medicines.
- Health workers can help **demystify the use of modern medicine** by...
  - **looking things up in their book,** together with the sick person's family (see p. **Part Three**-4),
  - **explaining the risks** of taking specific medicines—especially for children and pregnant women, and
  - helping people **appreciate the scientific value of useful home remedies** (see Chapter 7).
- Health workers can help organize community groups to perform **short skits or plays** showing problems that result from local misuse of medicines (see examples on pages **27**-3 and **27**-14).
- Health workers can **visit storekeepers who sell medicines**. Help them learn more about these products. Encourage them not to sell harmful or overpriced medicines, to explain uses, dosages, and risks, and to suggest that people buy nutritious foods rather than costly vitamins, cold formulas, and cough syrups.
- **Help people to become aware of how much they spend on medicines and why, and to look for low-cost alternatives.** (For example, see "Preventing and Treating Illness with Water," *WTND,* p. 46.)

Health care as a cause of poor health—and what to do about it

An example from the Philippines:

In August 1981, the authors and 4 village health workers from Central America visited the Philippines to exchange ideas with health workers there. On the edge of the city of Tacloban, we watched workers from the Makapawa Health Program and local mothers prepare an herbal cough syrup from ginger, tamarind leaves, bitter orange, and brown sugar. There was something exciting (almost magical—but not secret) about this process. Everyone took part. Men and children gathered dried palm fronds for the fire. Women stirred the boiling pot. Suddenly, as predicted, the dark brew changed into a fluffy white powder, double in volume. Finally, the bitter orange juice was added—after cooling, in order to protect the vitamin C.

This cough syrup—based on traditional herbal remedies—is now widely used in the area as a "cure-all" for colds, coughs, stomach distress, and many minor problems. It is a useful, low-cost home remedy that prevents people from wasting so much money on commercial medicines. The health workers have also taught local families to prepare an herbal "ABC Drink" (rehydration drink) for children with diarrhea. At the same time, they have helped people to learn about the misleading advertising of drug companies. As a result, families now spend less on doctors and costly medicines, and fewer children die.

Only when we sat down to talk with those present did we realize the impact on health of these inexpensive home remedies. The families told us the main problems affecting their health were **diarrhea, poor nutrition,** and **low wages.** But the health workers reported that far fewer children in the area are underweight today than when the program started 2 years ago. When we asked why, the health workers said it might be the nutrition education for mothers during the "under-six" clinics. But the mothers said they had heard it all before—that the main reason for their children's hunger had been lack of money. Yet today's wages are as low as ever. So why has health improved?

We asked the mothers how much their families are now spending on health care—herbal remedies, modern medicines, travel to doctors, etc. The average turned out to be from 10% to 12% of their year's earnings. (This seemed remarkably low in comparison to Africa and Latin America, where poor families we have asked often figure they spend from 30% to 50% of their year's earnings on health care.) Then one mother said, "We don't spend nearly as much now as we used to." So we asked everyone what they used to spend on health care before the program was begun. The average worked out to be between 40% and 60% of people's earnings! The hungry children were always getting sick. So their families would spend money on a witch doctor, then on tonics and cough syrups, and finally on expensive trips to city doctors and hospitals. And sometimes on a funeral. Often they had gone into debt and fallen prey to "loan sharks." If their children recovered, they had no money left to feed them well, so the children soon fell ill again. **Costly health care had become a main cause of poor health!**

Vicious cycle of health care causing poor health

But today, thanks to the homemade herbal medicines and community organization to fight the "loan sharks," the poor people's economy has improved. Spending less on health care, they can spend more on food for their children. The vicious cycle (of health care causing poor health) has been broken.

PAGES IN *WHERE THERE IS NO DOCTOR* THAT DISCUSS THE MISUSE, OVERUSE, AND CAREFUL USE OF MEDICINES

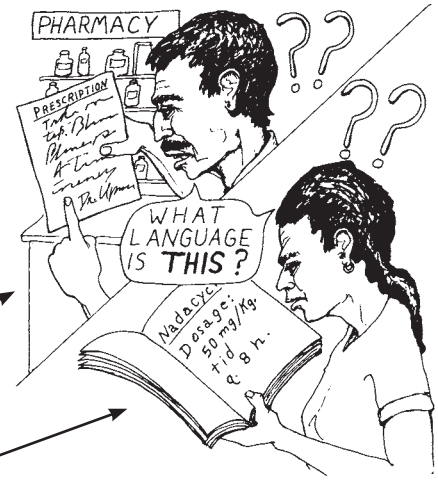
Boy with abscess from an unsafe injection.

REMEMBER: Teaching health workers to help people use medications sensibly is a vital part of preventive medicine.

ANOTHER PROBLEM: USING THE WRONG DOSAGE

In addition to the problem of medicines being used when They are not needed, it is a common mistake to use the wrong dosage. Using too little medicine may make treatment ineffective, and increase the resistance of infections to the medicine. Using too much may cause serious side effects, especially in small babies and children. Their bodies often cannot tolerate more than the recommended amount.

Mistakes in dosage are common for several reasons: In many countries, dosage information is not included with each medicine sold in the pharmacies. A person may hear about a medicine from a friend or neighbor, and give the adult dose used by the friend to a small child. Sometimes a person forgets what his doctor or pharmacist said about how much medicine to take and how often. Or perhaps the doctor or health worker does not explain the dosage clearly, or writes it in **handwriting that is impossible to read.** Maybe the sick person cannot read well. And even if they try to look up the dosage in a reference book, **the big medical words are hard to understand.**



Some sick people, in their desire to get well quickly, think that, "If one pill is good, more are better." So they take 2 or 3 pills (or spoonfuls or injections) when only one is recommended.

In other cases, sick persons cannot afford to buy a full prescription of a costly medicine. So they buy only a part, and take less than is needed.

Health workers, too, may make mistakes if they lack practice in looking up dosages and explaining them carefully. During training it is important that they learn to use the correct dosage for any medicine that they might be recommending. The health program can make this easier by taking some basic precautions:

- **Decide on a short list of basic medicines** that can effectively deal with the everyday problems and serious emergencies that are common in the area. This way health workers are not burdened with too wide a range of medicines, or the temptation to prescribe something for every problem. For a list of basic medicines needed in rural areas, see *WTND,* pages 334 to 337.
- **Always provide each medicine in the same standard strength.** This saves health workers from having to deal with the same medicine in 250 mg capsules one week, 500 mg capsules the next week, and 125 mg spoonfuls after that. Avoid accepting a wide assortment of donated sample medicines.
- **Teach health workers (through example and practice) to look up dosages** in a book like *Where There Is No Doctor* each time they use or recommend a medicine.

Learning to look up medicine dosages

In *Where There Is No Docto*r it is easy to find the uses, dosage, and precautions for most basic medicines. Look in the **Green Pages.**

To find the medicine you are looking for, check the "List of Medicines" *(WTND,* p. 341) or the "Index of Medicines" *(WTND,* p. 344). These lists show which pages have information about each medicine.

For example, pretend that Mrs. Babalama has asked you about the correct dosage of **acetaminophen (paracetamol)** for her **4-year-old son,** Edafi. He has a **headache and fever from a cold.**

You will find that the information about acetaminophen is on page 380.

Before recommending any medicine, read all about it. Find out its strength, its cost, what it is used for, its risks and precautions.

If you think that acetaminophen is the right medicine for the problem, that Edafi's family can afford it, and that the probable benefits are greater than the risks, then look for the correct dosage.

Make sure that the dosage listed is for the problem you want to treat. (Some medicines have more than one use, and different dosages for different uses.)

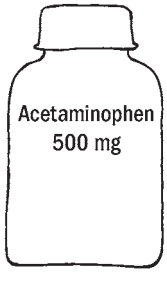
Now check the strength of the acetaminophen you have.

GENERIC NAME OF MEDICINE _____

STRENGTH AND COST _____

WHAT IT IS USED FOR _____

RISKS AND PRECAUTIONS _____



If you have 500 mg tablets...

How often the boy should take the medicine.

How much he should take each time.

½ tablet

Acetaminophen (paracetamol)—for pain and fever

Name:_____ price:_____ for _____

Often comes in: 300 to 500 mg tablets, syrups

Acetaminophen (paracetamol) is safer for children than aspirin. It does not cause stomach irritation and so can be used instead of aspirin by persons with stomach ulcers. It can also be used by pregnant women. But be careful not to take too much acetaminophen, this will poison the liver.

Dosage of acetaminophen—for pain and fever—500 mg tablets

Take by mouth 4 times a day. Do not take more than 4000 mg (8 tablets) a day.

In each dose give:
adults: 500 mg to 1 g (1 to 2 tablets)
children 8 to 12 years: 375 mg (¾ tablet)
children 3 to 7 years: 250 mg (½ tablet)
children 1 year to 2 years: 125 mg (¼ tablet)
children under 1 year: 62 mg (⅛ tablet)

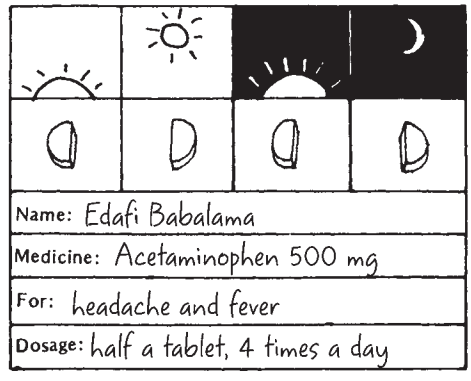
Once you have found the correct dosage, explain it carefully to Mrs. Babalama. Instead of telling her to give Edafi the medicine "every 6 hours," it may be better to tell her the times of day when Edafi should take the acetaminophen:

- at sunrise
- at noon
- at sunset
- at night, before going to sleep

This is about every 6 hours.

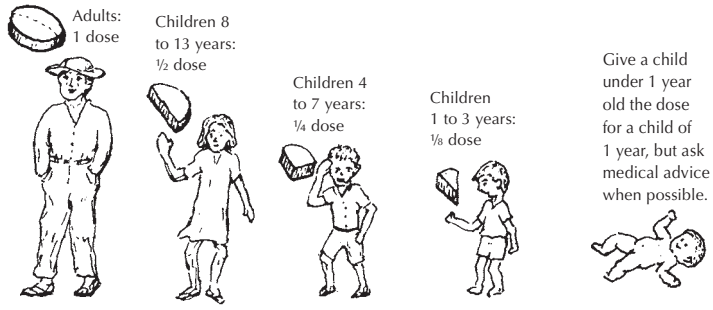
You may want to use the dosage blanks that are explained on pages 63 and 64 of ***WTND.*** Extra copies can be found in the back of the book.

Here is what Edafi's dosage blank would look like if you used 500 mg tablets.



Calculating the dosage

In the **Green Pages** of *Where There Is No Doctor,* most of the dosage instructions are given according to age—so that children get smaller doses than adults.



From *WTND,* p. 62

However, it is sometimes more accurate to determine dosage according to a person's weight. Information for doing this is sometimes included in parentheses ( ) for health workers who have scales.

For example, suppose Mrs. Abu's daughter Irene has roundworm. What dose of piperazine (*WTND*, p. 376) should she take? Irene is 4 years old and weighs 15 kilograms. The recommended dose of piperazine for roundworm (*Ascaris*) is 75 mg/kg/day.

Multiply 75 mg/kg x 15 kg = 1125 mg

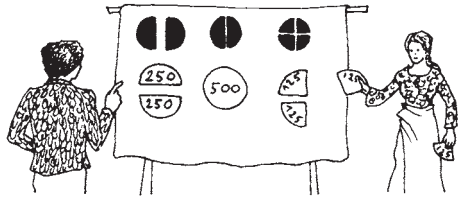
Irene should get 1125 mg of piperazine once a day for 2 days. Since one tablet contains 500 mg of piperazine, 1125 mg would be 2 to 3 tablets. If you compare this to the age-based dosing for Irene's age group, you will see that it is about the same:

children 3 to 7 years: 1500 mg (3 tablets)

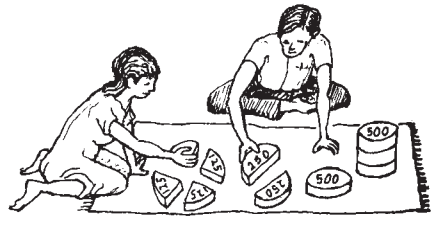
Teaching aids for learning about fractions and milligrams

Many health workers at first have difficulty in understanding the use of fractions and milligrams for medicine dosages. Teaching aids that can help them to see what fractions mean are shown below. Students can help make these teaching aids themselves.

a flannel board

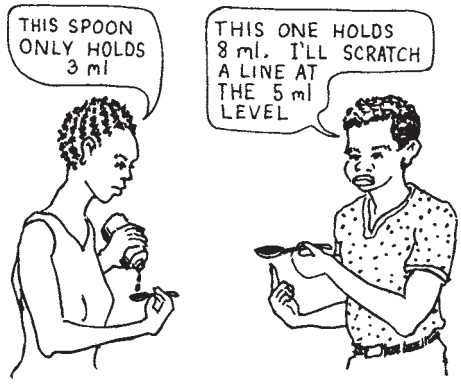


a set of blocks



The flannel board pieces or blocks that stand for tablets can be labeled 500 mg, 250 mg, or 400,000 Units to represent different medicines. Then students can practice figuring out dosages for adults and children.

If your program has a few old, expired pills, it is good practice for health workers to actually cut some into halves and quarters. That way they can see the doses that should be given to children of different ages.



It is also a good idea to have students check how much liquid medicine local spoons will hold. Ways of doing this are described on page 61 of *WTND.* **A standard teaspoon should measure 5 ml,** but spoons will vary greatly.

Practice in giving medicines to people

Students can practice in class with role plays about imaginary health problems. They can practice looking up medicines, figuring out the dosage, and then explaining the medicine's use to the "sick person." Experience shows that a great deal of practice is needed if health workers are to reliably give the right medicines in the right dosage. But with enough practice, they can do so.

Many mistakes in using medicines can be avoided if there is good communication between the health worker and the sick person. So it is important that students' role plays explore all of the points at which misunderstandings could arise. Make sure that health workers explain things carefully, and that the sick person clearly understands . . .

- How often to take the medicine
  - ♦ at what times of day
  - ♦ before or after eating (when this matters).
- How many days to continue taking the medicine, and when to expect to feel better. (Some persons expect to get well after having only a few pills or 1 injection.)

Many persons will take their medicine only until they feel better and then stop. This may do no harm in cases where the problem gets better by itself and the medicine serves only to calm symptoms like mild pain, fever, or itching. But for serious chronic problems, like tuberculosis, epilepsy, diabetes, and high blood pressure, to stop taking the medicine could be a serious mistake.

For many acute infections it is important to keep taking the medicine for at least 2 or 3 days after fever or other signs of infection are gone. For some infections, however, the length of treatment is longer:

"strep" sore throat and rheumatic fever	up to 10 days, depending on medicine
urinary tract infection	up to 5 days
syphilis	14 to 30 days, depending on how long signs have been present
"bubos" (*lymphogranuloma venereum)*	21 days
brucellosis or Malta fever	6 weeks
tuberculosis	at least 6 months
leprosy	6 months to 1 year

It is also important to clear up any questions the sick person may have about her treatment. Here are some questions or doubts she might have:

- What side effects might I feel? Are they dangerous? If they occur, should I stop taking the medicine?
- I am pregnant. Will this medicine harm my baby? (Try to give no medicines during pregnancy, if possible.)
- I am breastfeeding. Will the medicine enter the milk and harm my baby?
- Is it all right to use this medicine along with other medication I am taking for a different health problem?
- What foods should I avoid when taking this medicine? What foods should I eat?
- What about drinking alcoholic beverages or smoking while I am taking this medicine?

During training—both in role playing and in clinical practice—be sure health workers give all the necessary advice for each medicine they recommend.

BUT IF USED SENSIBLY, SOME MEDICINES
CAN PREVENT SUFFERING AND SAVE LIVES.