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Children's Bureau Publications of Interest to Parents

(Single copies may be obtained free by writing to the Children's Bureau, Washington 25, D. C.)

- For the Children's Bookshelf; a booklist for parents. Pub. 304. 24 pp.
- Home Play and Play Equipment for the Preschool Child. Pub. 238. 20 pp.
- Infant Care. Pub. 8. 127 pp.
- Prenatal Care. Pub. 4. 64 pp.
- The Road to Good Nutrition. Pub. 270. 57 pp.

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1946

For sale by Superintendent of Documents, U. S. Government Printing Office
Washington 25, D. C. - Price 15 cents

9-K

The
Public Health
Nurse and
School Health



Additional copies of this leaflet may be secured from National Organization for Public Health Nursing, 1790 Broadway, New York 19, New York. Price 5 cents each; \$4.50 for 100.

Foreword

Complete health service for all children of school age is one of the major objectives of a maternal and child health program.

Whether physical examinations are held in the school or in a health agency—a much discussed point—is relatively unimportant. What is important is that the program be a comprehensive one of health services and health education for children of school age; that it be developed jointly by health and education department authorities and directed toward maintaining and improving the health of each school child according to his individual needs.

Trends in planning for complete services, including the correction as well as the discovery of physical and emotional conditions, indicate that more health and medical services will be made available to school children; that more medical consultation will be provided to school authorities; and that the health education curriculum will be enriched in content and experience for the child.

The contribution of the public health nurse in the promotion of health programs for school children is recognized throughout the nation. In every state the demand for her services in this field far exceeds the supply. Increasing consideration should, therefore, be given to the most economical and effective utilization of public health nurses in the program of service to school children and also to the utilization of other professional groups in the health department or in the community who may be particularly prepared to handle certain phases of the program. The nurse should be free to use her particular skills in working with families of

school children and with teachers in relation to problems of community and individual health.

As plans go forward, opportunities are being given to nurses to learn more about the physical and emotional development of this particular age group as well as the most recent methods of treating sick children. Effective participation in the health program for school children will require also a better understanding by all health workers of the administration of the schools and of teaching methods.

As centers of community interest and activity, both health centers and schools will serve in the future as focal points for complete programs of health care for the school-age child and, working together, they will broaden their usefulness in equipping children and youth for healthy and responsible citizenship.

MARTHA M. ELIOT, M.D.

*Associate Chief,
Children's Bureau,
Federal Security Agency*

Health Program in Schools



Schools—rural and urban—are in a unique position to safeguard and promote health. In their keeping most of the hours of the day are one-fifth of all the people in the United States. These children are at a formative period—ready to learn the principles of healthful living, and, better still, to put those principles into practice if given guidance and encouragement. Moreover, they are of an age when many physical defects can be corrected, proper health habits formed—not only for school days but for adult life as well.

Few community agencies have such an opportunity for health instruction and protection. To make the most of it a well-planned health program is necessary—with active participation of all persons and agencies concerned with the health of the child. Parents, the school administrator, teacher, physician, public health nurse, health educator, the lay citizen and representatives of community health and social agencies—all are essential.

An adequate school health program includes health services, health instruction, and a safe and healthful school environment. In all these, as well as in the active development of home and community relationships, the public health nurse plays an important part.

The Role of the Public Health Nurse

IN HOME AND COMMUNITY RELATIONSHIPS

No other person concerned with the school health program knows the home and neighborhood of each child so intimately as the public health

nurse. Because one of her major activities is home visiting, she learns and understands what this environment is and its relation to the child's physical, emotional, and mental health. She is therefore in an excellent position to act as liaison between school and home and other community agencies. She interprets the conditions in the home to the school personnel, and helps parents understand the health services and policies of the school. Through conferences with parents she explains the importance of maintaining a home environment that will best provide for the healthy development of their children. If there are difficult home problems she refers parents to the right community agency for help. To school personnel and parents she explains the use of community health facilities. If these facilities are inadequate, she works toward their improvement and expansion through membership on health committees and through other community contacts.



IN SCHOOL HEALTH SERVICES

When there is a physician in the school, the public health nurse assists him in preparing and conducting health examinations. The nurse and the teacher together select the children most in need of examination, and provide the physician with appropriate data. The nurse encourages parents to be present at the examination, helps them and the school personnel to plan ways of securing the care recommended by the physician, and of working out a suitable regimen that will lead to good health habits for the child in and out of school.

The public health nurse also helps parents and teachers to recognize signs and symptoms that depart from the normal, and to take immediate steps to secure medical attention. Hers is the responsibility, too, for showing teachers how to isolate and care for sick children while they are at school.

Because teachers have day-to-day contacts with school children, the public health nurse instructs them in the importance of maintaining continuous observation of each child's health and behavior. Through in-service education programs and individual conferences, she demonstrates to them the technics for conducting periodic screening tests—vision, hearing, weighing, and measuring.

Emergencies in a school are generally referred to the nurse if the physician is not present. But her responsibility is limited to emergency first aid. Further treatment is given by the child's private physician or at a clinic as arranged by the family. Sometimes an accident may occur when neither physician nor nurse is present. For this reason a teacher or other person trained in first aid should always be present at school.

To the public health nurse belongs the additional responsibility for coordinating all available information concerning the health status of every boy and girl. She does this by making sure that there is a complete up-to-date health record, upon which is entered data given her by the teacher, and medical, dental and other health personnel; also by providing teachers, parents, and other agencies with written reports as needed, and by keeping a daily report of activities from which monthly and annual narrative and statistical reports are prepared.

IN HEALTH INSTRUCTION

Instruction in health should be part of the total curriculum of the school. Often the best opportunities for teaching health come in connection with other subjects. It is the teacher's role to give classroom instruction in health, and the nurse's role to act as consultant and adviser to the teacher. The nurse helps plan the health curriculum, serves as a member of the school health council or planning

group, and assists in the selection of authentic health education materials. She also makes a contribution by showing teachers how to relate health instruction to the specific needs of each child.

IN THE SCHOOL ENVIRONMENT

As a member of the team concerned with school health, the nurse has a part in seeing that standards for school safety and sanitation are maintained. In this connection she gives attention to teacher-pupil relationships as they influence mental, emotional, and physical health; to the school lunch; and to the health of school personnel.

Education Needed for School Nursing

The nurse serving the schools is chiefly a health consultant and adviser. To fulfill her responsibilities, she must have graduated from a school of nursing approved by a state board of nurse examiners, and passed state examinations giving her the title of R.N. She should also be thoroughly familiar with the practices and principles of public health nursing including child growth and development; and the principles and methods of teaching. To meet this requirement she should have completed post graduate education in public health nursing and courses in theory and field practice in school health work. It is also important that the nurse in the school have an understanding of the school system and its educational objectives.

Personal Qualifications

A well rounded personality, good physical and emotional health, an interest in children, an understanding of child development, the ability to work successfully with children and adults—all are essential qualifications for the nurse serving the school.

How to Secure Nursing Service for Schools

Nursing services should be provided to children of all ages in all schools—public, parochial, and private.

Each community works out the arrangement that best meets its needs. In some places boards of education employ public health nurses to give service to schools. In other communities nursing service is provided by arrangement with the local health department, or purchased by a board of education from the local visiting nurse association just as nursing service is purchased by small industries.

Three out of every four public health nurses in the United States give service to schools.

Supervision is Important

Supervision is essential for the continual improvement of a school nursing service, and for the professional growth and development of individual nurses. This is true even when the nurse serving the school meets all recommended qualifications. It is doubly true if the nurse does not have these qualifications.

Smaller school systems or organizations unable to provide supervision may arrange to get it through a local or state health department or by purchasing it from a voluntary agency such as a visiting nurse association. In addition to the qualifications necessary for the nurse in the school (see page 8), the supervisor of school nursing also needs previous experience in a school health program and preparation in the theory and practice of supervision.



Further Assistance to Nurses and Employers

The National Organization for Public Health Nursing offers consultation to school nurses and employers, school administrators, and teachers con-

cerning the various aspects of the work of public health nurses employed in the school health program. State departments of education or health, depending upon the arrangement in each state, will also give this consultation.

All nurses serving schools are invited to join the School Nursing Section of the National Organization for Public Health Nursing and of their State Organization for Public Health Nursing.

The Professional Counseling and Placement Service, 8 South Michigan Avenue, Chicago, Illinois and the Nurse Counseling and Placement Office of the New York State Employment Service, 119 West 57 Street, New York, N. Y. maintain a register of public health nurses available for positions in all parts of the country.

Personnel Policies for Nurses in Schools

Recommendations concerning salaries are not included in this pamphlet because of the importance of determining wages locally, reviewing salary schedules annually, and making changes in accordance with changing conditions. Reports showing country-wide trends and current practices in salaries, conditions of work, hours of work, vacations, sick leave may be obtained from the National Organization for Public Health Nursing.

References

The Nurse in the School—An Interpretation. A joint committee report of the American Medical Association and the National Education Association. 40 p. 20 cents. Write: National Education Association, 1201 Sixteenth Street, N.W., Washington, D. C.

Health in Schools—Twentieth Year Book. American Association of School Administration. 1942. 544 p. \$2. Write: National Education Association, Washington, D. C.

School Nursing. Mary E. Chayer. Second edition revised. G. P. Putnam's Sons, New York, N. Y. 1937. 329 p. \$3.

Solving School Health Problems. Dorothy D. Nyswander. Commonwealth Fund, 41 East 57 Street, New York, N. Y. 1942. 389 p. \$2.

The School Administrator, Physician and Nurse in the School Health Program (Functions and Education). School health monograph No. 13, Metropolitan Life Insurance Company, 1 Madison Avenue, New York 10, N. Y. 1947. 56 p. Free.

Suggested School Health Policies. Health Education Council, 10 Downing Street, New York 14, N. Y. 1945. 46 p. 25 cents.

Available from the National Organization for Public Health Nursing, 1790 Broadway, New York 19, N. Y.:

Manual of Public Health Nursing, 3rd edition. 1939. 548 p. \$3.

Personnel Policies for Public Health Nursing Agencies. 1946. 32 p. 75 cents.

**Supervision of School Nurses.* 1945. 15 p. 15 cents.

Programs of Study for the Preparation of Public Health Nurses. 1946. 11 p. Free.

NOPHN Publications List. Free.

Your Share in Public Health Nursing. Free.

School Nursing. Bibliography. 10 cents.

**Volunteers in the School Health Service.* Martha L. Clifford, M.D. 1945. 2 p. 5 cents.

**The Nurse-Teacher Conference.* Gladys E. Jorgensen, R.N. 1946. 5 p. 10 cents.

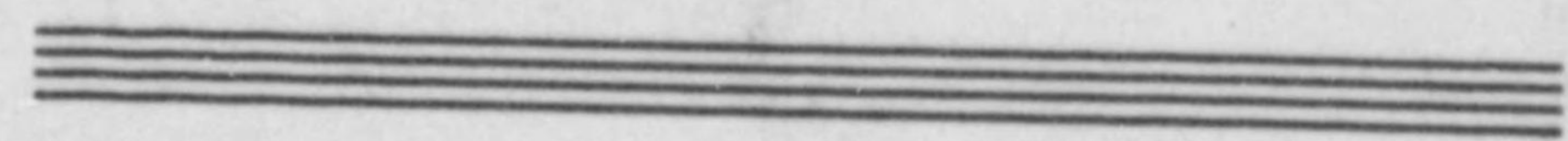
**School Nurse, School Physician, and Teacher Health.* L. C. Newton Wayland, M.D. 1946. 7 p. 10 cents.

Suggested Standards for Camp Nursing. 1944. 19 p. 25 cents.

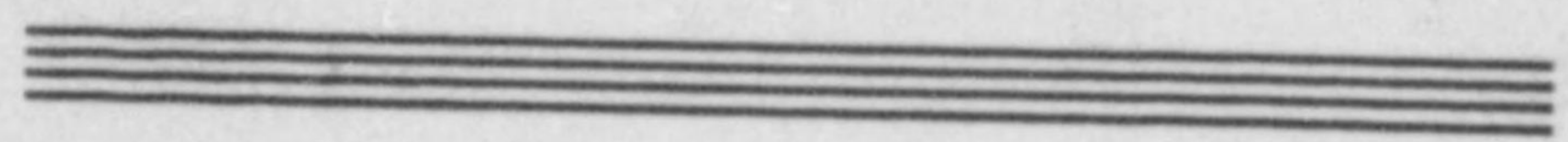
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**NATIONAL ORGANIZATION FOR
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School Health

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THE SCHOOL HEALTH PROGRAM

(SUGGESTED METHOD FOR ORGANIZATION -- INCLUDES THREE PHASES)

I. Community Organization

- a. Conferences held to familiarize official and voluntary agencies with plans for a total School Health Program.
- b. Conferences with district health officers and nursing supervisors regarding services and needs. Select key figures in Health Education.
- c. Notices Printed monthly in School Bulletin regarding the School's health program. Later as the program gains more headway a School Health Bulletin can be published; will need formation of School Health Committee. Object of Bulletin is to give information to the teachers throughout the City.
- d. Conferences with School principals.

II. Specific Service to Schools as a Starting Point.

III. Formation of an Advisory Committee.

During the year determine:

1. Needs of teacher and student.
2. Enlist the assistance of numerous voluntary and official agencies to help meet needs.
3. Teachers should be made aware of common resources.

The system of forming School Health Councils within each school and the appointment of a District Health Coordinator would facilitate the organization and coordination of a School Health Educational Program for all Kobe City School.

OUTLINE OF SCHOOL HEALTH SERVICE

I. General Service

1. Health teaching materials
2. Visual aids
3. Staff meetings
4. Service demonstrations

II. Special projects (Program adapted to each community)

1. Health education exhibit at a Teachers Institute. Speakers obtained, etc.
2. A high school X-ray survey with cooperation of Department of Health.
3. Health education material for loan to the various schools. To consist of organized library file. This is on order now and may be obtained from M.G. Public Health Office in about two to three months. School Boards note "Suggested School Health Policies."
4. Survey needs of teacher.

Study of curricula versus school problems and needs.,

III. Direct Services -- means long term planning.

Nutrition - may be instituted thru the school lunch program.

Parent education

BCC inoculations

X-ray

Audiometer (test for hearing)

Visual acuity testing

Physical examinations every first year and third thereafter.

Dental service.

Health Records.

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Visual acuity testing

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Dental service.

Health Records.

2 L

COMMON CHILDHOOD DISEASES



**METROPOLITAN LIFE
INSURANCE COMPANY**
HOME OFFICE: NEW YORK
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*See Foreword.

To Parents

It is comforting to parents to know that many new ways have been found, through recent discoveries in medical science, to protect the life and health of babies and young children.

Specific preventive measures have almost wiped out diphtheria and smallpox. A vaccine now in general use is helping to protect children from whooping cough. Protective substances also have been discovered for giving temporary protection against certain communicable diseases, if given soon after exposure, or for making lighter or shorter an actual attack of the disease.

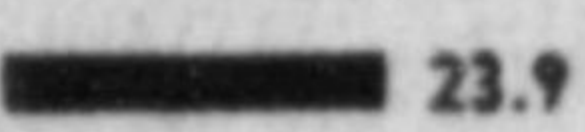
More is known, too, about the manner in which communicable diseases are spread, so that they are less prevalent. As a rule, children are healthier because parents are better informed about nutrition and child care. Thus children are less likely to

have complications when they do contract a communicable disease and are more likely to recuperate quickly.

All of these factors have played a part in reducing the mortality from communicable diseases. The chart on the left will show, at a glance, how striking this reduction is.

The measures available for preventing communicable diseases or for making an attack lighter are discussed under each disease. It would be wise to speak to your physician about these measures or to take your children to a clinic. See, also, the Chart, pages 16-19, and the Immunization Timetable, pages 7-8.

● WHOOPING COUGH

1911  23.9

1945 ■ 1.6

● MEASLES

1911  34.0


1945 ■ 1.7

● SCARLET FEVER

1911  35.4

1945 ■ 1.9

● DIPHTHERIA

1911  78.6

1945 ■ 3.0

Standardized death rates from
communicable diseases per 100,000
Metropolitan Industrial policyholders,
ages 1 to 14.

How Communicable Diseases Are Spread

A communicable disease is a disease caused by a living germ or virus which can be spread from the sick person or a carrier to a well person. Diseases of this kind are often called "catching."



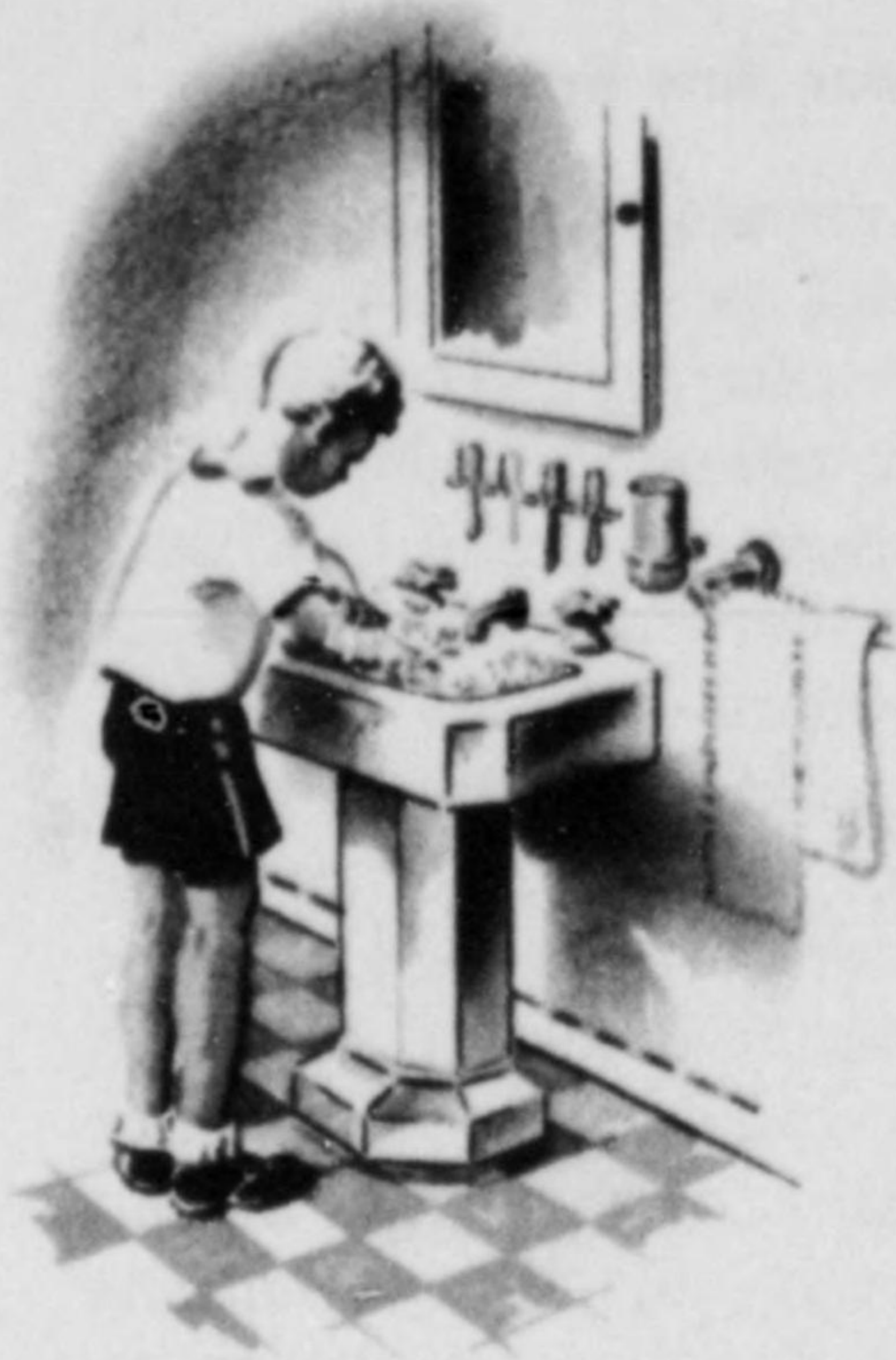
Most communicable diseases are spread by germs or viruses that enter the body by way of the mouth or nose.

In talking, laughing, coughing, or sneezing, tiny drops of moisture are sprayed into the surrounding air. If a person has a cold or some other active infection of the nose, throat, or lungs, this spray contains germs. A well person, standing or sitting near by, may breathe in the germs and thus catch the disease. This is what is meant by "droplet infection."

Disease germs are also spread by handling objects or by using eating utensils, towels, and so on, which have been freshly soiled with infectious body discharges, such as drops of moisture from the nose and throat, urine, and waste from the bowels. Germs picked up by handling contaminated objects may be carried on the fingers directly to the mouth, or on food which the fingers have touched.

How to Prevent the Spread of Communicable Diseases

1. Teach the child to:
 - (a) Keep as far away as possible from people who cough or sneeze carelessly, especially during epidemics.
 - (b) Protect others when he coughs or sneezes by covering his mouth and nose with a handkerchief.
 - (c) Wash his hands with soap and water before eating or handling food and after using the toilet.



(d) Use only his own toilet articles and personal belongings — towels, washcloths, toothbrush, hairbrush, comb, handkerchief, etc.

2. Be sure that your children:

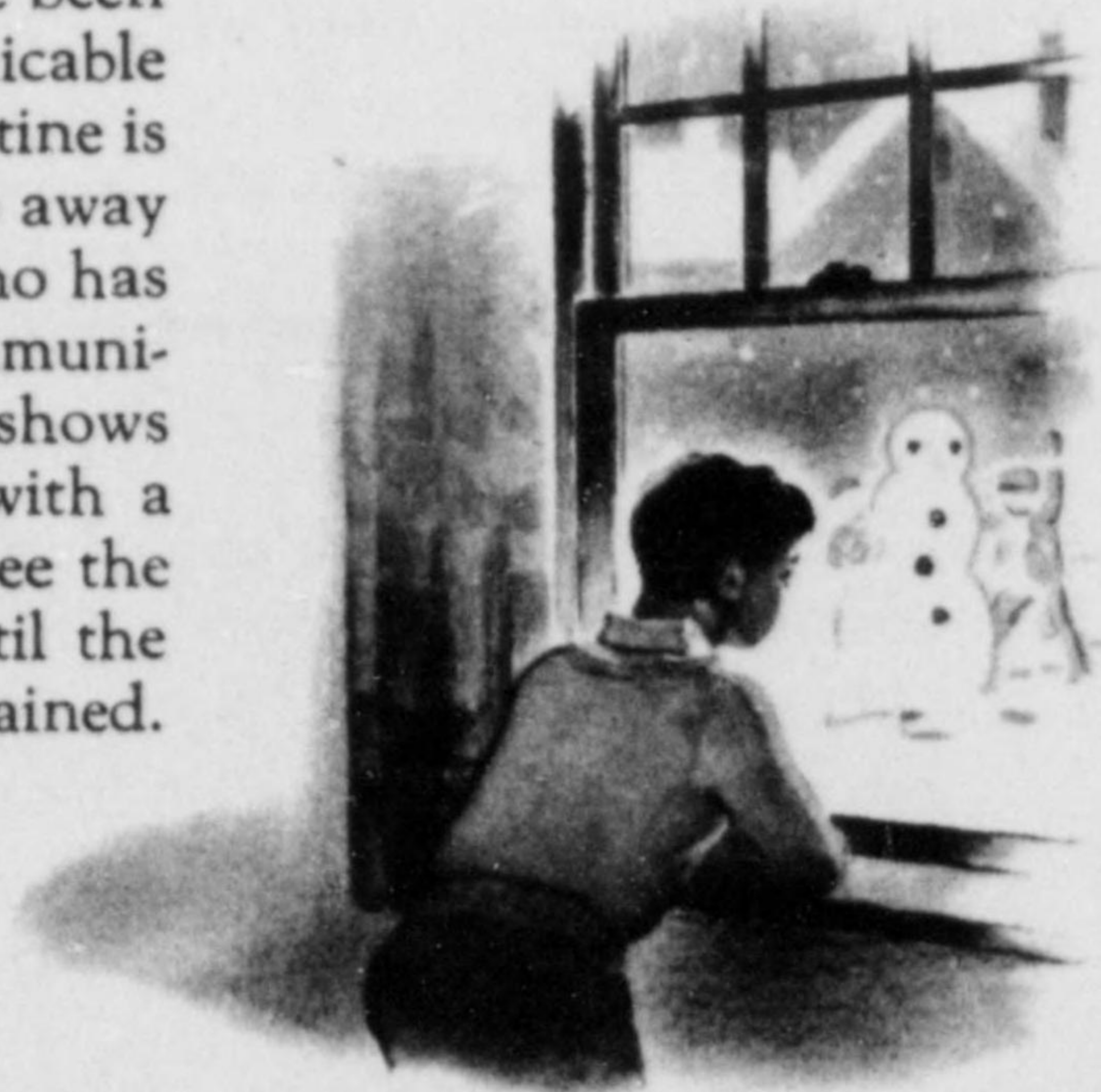
(a) Drink water only from sources which are known to be pure. Boil it before drinking if it is not known to be pure.

(b) Use only eating and drinking utensils which have been washed in soap and hot water.

3. Be especially careful to protect babies and young children from

exposure to infection. It is best not to take them into crowds or into poorly ventilated public places at any time; this is particularly important during epidemics.

4. Cooperate with the health department by keeping in strict isolation anyone sick at home (or going to a hospital) with a communicable disease for which isolation is required, and by keeping in quarantine susceptible people who have been exposed to a communicable disease for which quarantine is required. Be sure to keep away from others any child who has been exposed to a communicable disease or who shows signs of coming down with a communicable disease (see the Chart, pages 16-19), until the physician's advice is obtained.



5. Ask your physician about calling the public health nurse if someone in your family is sick with a communicable disease. She can show you how to prevent spreading the disease to other members of the family and outsiders. See *When a Child Is Ill*, pages 10-12.



How the Body Fights Disease Germs

No matter how hard we try to prevent the spread of disease germs, probably we are all more or less constantly exposed to infection. Fortunately, the body has various lines of defense against invading germs which may either operate against all germs (nonspecific) or against the germs of a particular disease (specific).

Nonspecific Lines of Defense. The unbroken skin and healthy mucous membranes help to keep out most bacteria. Also, certain body secretions, like tears, mucus, and gastric juice, which are more or less antiseptic, may destroy or stop the growth of various germs until they can be flushed out of the system.

If disease germs get past these outer defenses into the blood stream, the white cells of the blood and lymph go into action. These cells have the power to devour germs and thus destroy them.

Nonspecific lines of defense are strongest when a person is in good physical condition. He is then said to have good body resistance. In the final analysis, strong body resistance is always the best protection we have against diseases like colds and pneumonia, which a person can have many times during his life. Body resistance can be weakened by failing to eat enough of the right kinds of foods every day, by getting too tired day after day, by chilling of the body, and by illness. Body resistance can be *strengthened* by eating the right kinds of foods, having

regular meals and good elimination, getting enough sleep, rest, and recreation, spending some time each day out of doors, and wearing adequate and suitable clothing in cold or wet weather.

Specific Lines of Defense. Against many diseases—for example, diphtheria, smallpox, and whooping cough—one attack usually gives lasting protection. A person who has had a disease of this kind is said to be actively immune from it. A person who has not had it is said to be susceptible to it.

One attack of such a disease gives protection against future attacks because substances called antibodies, which are manufactured by the body cells to fight the disease, stay in the body after recovery. These antibodies form a specific line of defense—that is, they fight only against the germs (or their toxins) which caused the body to produce them.

Active Immunization. Fortunately we now have a way of acquiring active immunity from many diseases without actually suffering an attack. It was found that the injection of very small amounts of weakened or dead germs or their weakened toxins causes the body to form antibodies just as an attack of the disease would do. For example, weakened diphtheria toxin, called diphtheria toxoid, stimulates the body to build up immunity from diphtheria; cowpox virus, called smallpox vaccine, causes the body to build up immunity from smallpox. Usually, however, the protection given by active immunization, as this process is called, does not last as long as the protection given by an actual attack of the disease. For that reason, booster doses of the immunizing substance are necessary from time to time.

Immune Serums. It is possible to give a person immediate protection for a short time from certain communicable diseases (passive immunization) or to make an attack of the disease lighter, by injecting material containing antibodies. This material, called immune serum, is obtained from the blood of an immune person or an immune animal. The protection given by an immune serum is not lasting because the body of the individual receiving it took no part in producing it; therefore, it is a foreign substance which the body gets rid of as quickly as possible. One example of an immune serum is the antitoxin used in the treatment of diphtheria and in preventing diphtheria in a susceptible child after exposure.

Immunization Timetable

(Adapted from recommendations of the American Academy of Pediatrics and the American Public Health Association)

● DIPHTHERIA

Begin from 6 to 9 months of age—two or more injections of diphtheria toxoid* at intervals recommended by the physician.

From 18 to 24 months—another injection of diphtheria toxoid or the Schick test. If the Schick test is positive, further injections of toxoid should be given.

At 6 years of age and again at 12 years of age—reinforcing doses of diphtheria toxoid.

In diphtheria epidemics—reinforcing, or booster doses.

● SMALLPOX

By 6 months of age—the first vaccination.

On entering school—revaccination.

The entire population of a locality should be vaccinated during an outbreak of the disease in a severe form.

A successful vaccination usually protects from five to seven years, more or less.

● TETANUS (lockjaw)

In infancy or early childhood—the first immunization with tetanus toxoid*.

Within a year—a booster dose, followed by additional doses at intervals of about five years.

At the time of an injury from which there is danger of tetanus infection, the doctor usually gives a booster dose for those previously immunized. Tetanus antitoxin to give temporary immunity (lasting about 10 days) is given to those who have not previously received immunization.

* Combined Toxoid—A combined toxoid which serves the double purpose of protecting a child from whooping cough and tetanus at one and the same time, or a combined diphtheria and tetanus toxoid, is now used by many physicians. A triple combination which includes diphtheria toxoid, tetanus toxoid, and whooping cough vaccine is also sometimes used for first immunizations after 6 months of age and for booster doses.

- **TYPHOID FEVER**

Immunization is advisable for persons living in localities where there is danger of exposure to typhoid fever. Speak to your physician about having your children and yourself protected from it periodically or when going on a vacation trip. Typhoid immunization lasts about one year.

- **WHOOPING COUGH**

From 3 to 6 months of age (preferably the third month)—immunization with whooping cough vaccine.

On entering school—a booster dose. See footnote, page 7.

The Stages of a Communicable Disease

The course of a communicable disease can be divided roughly into three stages: (1) the incubation period, (2) the period of acute illness, and (3) convalescence. See Chart, pages 16-19.

The Incubation Period

This is the period which lasts from the time disease germs enter the body until the appearance of the first signs and symptoms of the disease they cause. The incubation period may be a matter of hours, days, or weeks, varying with the disease. (See Chart, pages 16-19.) In some diseases where the source of exposure is definitely known and the incubation period is long, a child may be allowed to go to school or to mingle with others until close to the time when the first signs of infection are expected to appear. The disease cannot be transmitted to others by an affected child during the incubation period.



The Period of Acute Illness

Sniffles, cough, sore throat, fever, chills, vomiting, loss of appetite, a convulsion, restlessness, and irritability are some of the warning signs which indicate that the incubation period is over and the acute stage has begun. Usually they occur in combinations of two or more and differ with the disease. These early signs may persist

for several hours or a day or two before the appearance of a sign, such as a rash, which is really typical of the disease. During the acute stage the fever and other signs and symptoms are at their height, and rest in bed is essential. The acute stage, also, is likely to be the period of greatest communicability. It is particularly important, at this time, to take every precaution to prevent spreading the disease to others. The length of acute illness varies with the disease and the severity of the attack.

Convalescence

Convalescence usually begins when the fever goes down and other indications of acute illness disappear, and ends with complete recovery. The length of convalescence varies depending upon the disease, the severity of the attack, and the recuperative power of the patient. In children, the latter is very great. The patient should not get up until the physician considers it safe.

In order to help the child regain his strength promptly, special attention should be given in the convalescent period to providing rest, simple easily digested food, fresh air, and, if possible, sunshine or ultra-violet light treatment under the physician's direction. Care should be taken to protect the child from cold and, of course, from contact with those who are ill.

As a rule, children recover so rapidly that there is some danger that they may be permitted to do too much before their full strength has returned. Most school children who have had a fever of several days' duration should have a day or two of normal activity at home after convalescence and before returning to school, or a modified school program for a brief period.

It is advisable to take a child to the physician again in a few months after an attack of a serious communicable disease to make sure that there are no bad aftereffects.



Regulations About Communicable Diseases

Reporting

The local health department should be notified promptly when a case of reportable communicable disease exists or is suspected of existing. In most States the physician is required to make the report.

Prevention of Spread

Definite laws govern isolation, quarantine, and terminal disinfection in cases of communicable disease, although the same regulations do not apply to each disease. The physician or the health officer, or his representative, who knows the State and local laws regulating the procedures to be followed in each case, gives information about the laws; and the public health nurse, if there is one, will explain how they are to be observed. The entire family should cooperate in carrying out the necessary arrangements. This will help to prevent the spread of the disease.

When a Child Is Ill

A mother soon notices anything unusual in a child's behavior which leads her to suspect that he is "coming down with something." Maybe the child just seems out of sorts, or he may show more definite signs of illness.



A mother is not expected to diagnose her child's illness or decide how to treat it; she should, however, be quick to recognize signs of illness and be responsible for getting medical care promptly. Some of the specific points to follow in caring for a sick child are discussed under each disease, but there are certain general things to do in any case of illness.

1. Put the child to bed in a room by himself, if possible, or at least in a bed by himself, well separated from the rest of the family, where he can rest until the physician's advice can be obtained. Meanwhile, keep other people away from him, especially other children.
2. Call your physician. If he cannot come immediately, he will give you instructions to follow until he gets there. Remember that the first hours are often the most important in illness. Prompt medical care may prevent complications and may even save life. The protective substances which are used to lighten or shorten the attack of certain communicable diseases are of most value when given early. The sooner they are given, the better the results. If the disease is diagnosed promptly, treatment can be started at once.
3. Use general precautions to protect yourself and to prevent spreading the disease to other members of the family and outsiders if it proves to be communicable.



- (a) Wash your hands thoroughly after giving care to the child.
- (b) Use old cloth or paper tissues for handkerchiefs. Place cloth or paper soiled with discharges from the mouth and the nose or from a discharging ear in paper bags and dispose of these as soon as possible.
- (c) Keep the child's toilet articles in a separate place.
- (d) Boil eating utensils after each use for 10 minutes.

Special Precautions

The nursing care of a patient sick with a communicable disease is entirely different from ordinary nursing because of the need to prevent spreading the disease. In many cities, separate hospitals have been established to care for communicable disease cases.

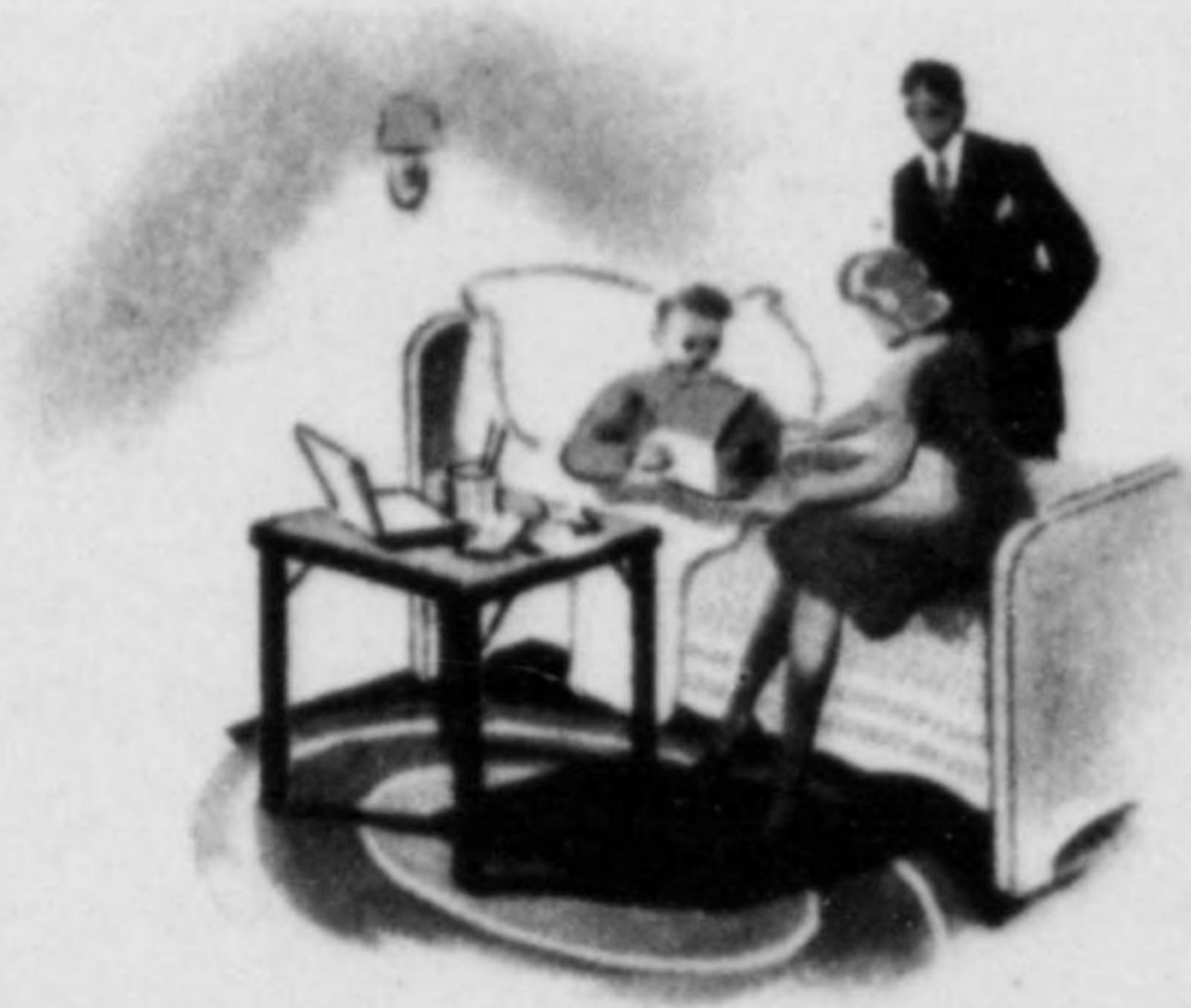
The procedures to follow in caring for the patient at home are complicated, and every mother responsible for taking care of her sick child needs help and advice in protecting herself and the other members of the family.

In some communicable diseases—for example, scarlet fever—special precautions may be necessary to prevent spreading the disease. The physician or the nurse will explain these.

In nearly every community there is a public health nursing service which provides visiting nurse care. The physician may suggest calling the visiting nurse, who will teach the mother or some member of the family how to carry out disinfection measures during and after illness.

Diversions During Convalescence

It is not always easy to keep a patient in bed after he begins to feel better. This is especially true of children. To have something to do that is interesting and amusing during an enforced stay in bed is a great help. Booklets giving instructions on how to make things and on how to play simple games can be found in public libraries or in arts and crafts shops. Usually, crepe paper manufacturers put out booklets which explain how to make useful and attractive objects from crepe paper. Much simple handicraft material can be found in 5-and-10-cent stores, or in neighborhood novelty stores. Very simple things which can be found in any home may be useful in providing diversions—for example, bits of ribbon and colored paper, empty spools, cardboard boxes, tinfoil, cutouts from magazines, postcards, and similar materials.



CHICKENPOX

(Varicella)

Chickenpox is one of the most common diseases of childhood. It usually begins with feverishness and loss of appetite. Within about 24 hours the skin breaks out in small, raised, rose-pink spots which change into blisters. The blisters appear in successive crops. Usually they are more abundant on the scalp, the mucous membranes, and the trunk of the body than on the arms and legs. There are so few of them in some cases that they escape notice.

The blisters quickly become crusted with scabs which eventually fall off. The scabs are not contagious. Each crop completes its course from rose-pink spot to crust in from two to four days.

Scratching or picking at the blisters may cause serious sores and disfiguring scars. The doctor will probably suggest a remedy to relieve the itching, which may be severe. Usually the child is not very ill and begins to feel better in from one to three days.

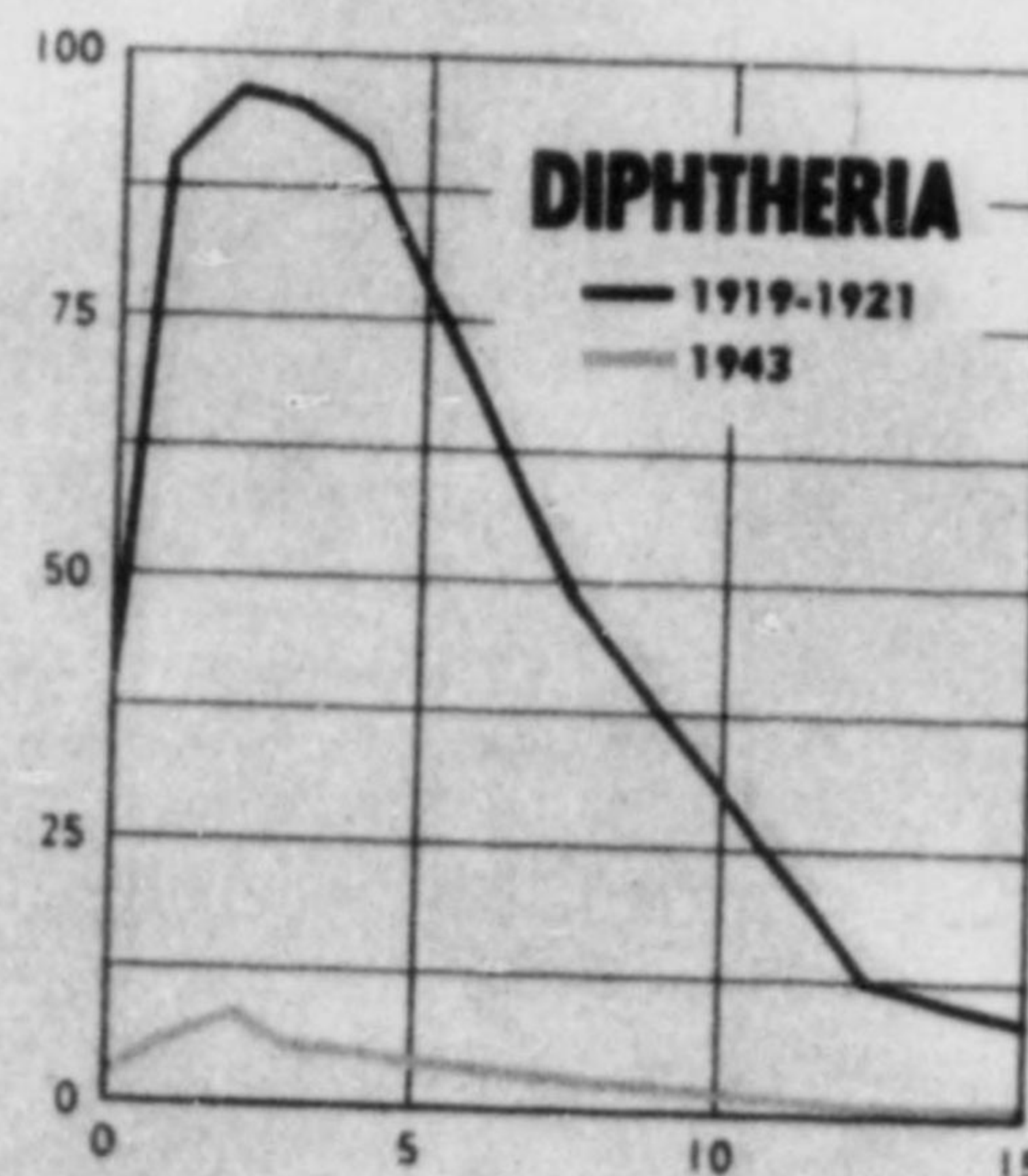
A Warning

Chickenpox and smallpox are entirely different diseases. However, mild smallpox is sometimes mistaken for chickenpox. That is, one reason for having an early diagnosis.

DIPHTHERIA

Diphtheria is a dangerous contagious disease caused by the diphtheria bacillus. The diphtheria bacillus grows mainly in the nose and throat and produces a powerful toxin or poison which is spread by the blood stream. This poison may attack the heart muscle and damage it severely. Very young children are more susceptible to diphtheria and are more likely to die of it than older children are.

Diphtheria usually starts with a sore throat, chilliness, slight fever, aching pains, loss of appetite, and sometimes vomiting and headache.



The signs and symptoms may be so mild that the disease will go unrecognized, or it may be mistaken for tonsillitis or laryngitis. Yet, even when the symptoms are mild, the child may be in great danger.

Antitoxin is used in the treatment of diphtheria, and when given early enough usually will prevent death from the disease. Among those who are not protected by immunization and have been exposed to the disease, antitoxin produces immediate but temporary protection.

It is vitally important to give antitoxin early in diphtheria. If your child has not been immunized and shows any of the symptoms mentioned above—*call the doctor at once.* When diagnosed early, the doctor can give antitoxin promptly and with greater chance of curing diphtheria. When antitoxin is given after the third day, much less good can be expected than when it is administered earlier.

Convalescent care is of great importance in diphtheria. Diphtheria patients should never get up or sit up until the doctor says it is safe to do so. Requiring a child to stay in bed, even though he feels better and begs to sit up, protects him from the threat of serious complications and aftereffects that can be more dangerous than the disease itself.

Prevention

Diphtheria can be prevented by immunization. Many thousands of children have been protected since the discovery of a diphtheria preventive, and year after year the mortality from diphtheria has continued to drop. Recently, however, there has been a rise in diphtheria cases and deaths in some parts of the country. It may be that diphtheria has been brought in by persons returning from overseas, particularly from Europe, where there have been many cases and deaths from that disease, and in this way children, who have not been immunized, have contracted it.

Do not think that your child is safe from diphtheria because you have not heard of any cases in your town.



Your child is *not* safe from diphtheria until he has been successfully immunized.

Diphtheria toxoid is the substance which is used to protect a child from diphtheria. It is necessary to give several injections of diphtheria toxoid in order to immunize a child.

The Schick test is helpful in determining whether or not a child is safe from diphtheria. It is usually given three to six months after the toxoid treatment has been completed, to see if an additional injection is necessary. The Schick test may also be given at appropriate intervals later on to find out whether booster doses of toxoid are needed.

Remember: The initial immunization with diphtheria toxoid should be followed up at the intervals recommended in the Immunization Timetable, pages 7-8.

DYSENTERY, BACILLARY

Dysentery is a communicable disease of the bowels, which causes diarrhea and—in the severe forms—fever, and blood and pus in the bowel discharges. It is advisable to keep in bed any child who has diarrhea, and not to give food or medicine of any kind until the physician is reached. Sometimes the physician wishes to give a sulfa drug if it is proved by laboratory tests that the child has bacillary dysentery.

Prevention

Bacillary dysentery occurs in epidemics, especially in institutions, camps, barracks, or similar places where groups of people live together. It is rarer in communities where the board of health sees to it that sewage is disposed of in a sanitary manner; that the water and milk supplies are pure; and that the preparation and handling of food in public eating establishments is properly supervised.

In the home, the utmost care should be taken to insure cleanliness in the preparation of food for infants and to protect food by keeping it covered and under cool conditions. Handwashing, after using the toilet, and before eating or handling food, is particularly important.

COMMUNICABLE DISEASES OF CHILDHOOD*

Disease	Chickenpox	Diphtheria	Dysentery, Bacillary
The Cause	A virus: Present in discharges from the mouth and nose and in discharges from vesicles on the skin.	The diphtheria bacillus: Present in discharges from the nose and throat, open wounds, etc., and in secretions from the nose and throat of carriers.	Bacilli: Present in bowel discharges of an infected person or carrier.
How Spread	By direct contact.† Very contagious.	By direct and indirect contact.† Contaminated milk or milk products and carriers are important sources of infection.	Indirect contact.† Contaminated drinking water and milk and other food contaminated by food-handlers, flies, etc., are important sources of infection.
Incubation Period (From date of exposure to first signs)	From 12 to 21 days.	Usually from 2 to 5 days, but occasionally longer.	From 1 to 7 days, usually less than 4.
Period of Communicability (Period during which disease is contagious)	From 1 day before onset of early signs to about 6 days after appearance of first crop of blisters.	From about 24 hours before onset of symptoms for 2 weeks or less, rarely over 4 weeks.	From the first symptoms until the bowel discharges are free of the bacilli responsible.
Ages and Seasons of Greatest Prevalence	Most common among children less than 15 years. Winter and spring.	Most common among children less than 10 years. Fall and winter.	Universal, but more common in children than in adults. Summer.
Methods of Control	No specific preventive. Exclusion from school during period of communicability. Immunity usual after one attack.	Preventive: Diphtheria Toxoid. Antitoxin gives brief immunity (10 days to 3 weeks) and given early in an attack may check disease. See pages 14-15. Isolation required until 2 cultures obtained from nose and throat, at interval of 24 hours, show that no diphtheria bacilli are present. Immunity does not necessarily follow one attack.	No specific preventive. For general measures, see page 15. Isolation during period of communicability. A brief immunity follows one attack.

* Adapted from "The Control of Communicable Diseases," an Official Report of the American Public Health Association, 1945.
† Direct contact means directly from person to person. Indirect contact means indirectly through handling, eating, or drinking anything soiled by discharges from the sick person or a carrier.

COMMUNICABLE DISEASES OF CHILDHOOD (continued)

German Measles	Infantile Paralysis	Measles	Mumps
A virus: Present in discharges from the mouth and possibly the nose.	A virus: Present in discharges from the nose, throat, and bowels.	A virus: Present in the discharges from the mouth and nose.	A virus: Present in discharges from the mouth, possibly the nose.
By direct and indirect contact.† Very contagious.	By direct and indirect contact.† (Frequently by a carrier or someone suffering from a very mild, unrecognized attack.)	By direct and indirect contact.† Very contagious.	By direct and indirect contact.†
From 14 to 21 days, usually about 16 days.	From 7 to 14 days.	About 10 days from exposure to onset of fever, 13 to 15 days to appearance of rash.	From 12 to 26 days, average 18.
From one day before onset of symptoms of a cold to from 4 to 7 days. Exact period uncertain.	Uncertain. Probably from latter part of incubation period through first 2 weeks of the disease.	About 9 days: from 4 days before rash appears to 5 days afterwards.	Uncertain. Probably from 1 or 2 days before typical symptoms appear until swelling of the affected glands has disappeared.
Most common among children but fairly frequent in adults. Winter and spring.	Children usually more susceptible than adults. Late summer and early fall.	Chiefly children from 5 to 14 years, but common also in those less than 5. Winter and spring, especially from March to June.	Chiefly children and young adults. Less prevalent than other common childhood diseases. Winter and spring.
No specific preventive. Immunity usual after one attack.	No specific preventive. For general measures, see pages 21-22. Isolation for 2 weeks after onset of disease. Immunity usual after one attack.	No specific preventive, but protective substances available for temporary prevention. Protective substance given within 5 days after exposure will lighten attack. See page 23. Isolation during period of communicability. Immunity usual after one attack.	No specific preventive. Immunity usual after one attack, but second attacks not rare.

† Direct contact means directly from person to person. Indirect contact means indirectly through handling, eating, or drinking anything soiled by discharges from the sick person or a carrier.

COMMUNICABLE DISEASES OF CHILDHOOD (continued)

Disease	Respiratory Streptococcal Infections	
	I Scarlet Fever	II Streptococcal (Septic) Sore Throat
The Cause	Hemolytic streptococci of several strains: Present in the discharges from the mouth and nose, or the ears, if affected, of acutely ill or convalescent patients or carriers.	
How Spread	By direct and indirect contact.† Floor dust and contaminated milk or other food may be important sources of infection.	
Incubation Period (From date of exposure to first signs)	From 2 to 5 days.	
Period of Communicability (Period during which disease is contagious)	Uncertain. From first symptoms to complete recovery (about 14 days in uncomplicated cases) or until all discharges have ceased.	
Ages and Seasons of Greatest Prevalence	Children and adults. Children less than 10 years, especially less than 5, most susceptible to scarlet fever. Fall, winter, and spring.	
Methods of Control	No specific long-term preventive for streptococcal respiratory infections. Scarlet fever: Several substances are used for giving a short immunity. Scarlet fever antitoxin serum, sulfa drugs, or penicillin may be used in an attack if the case is serious or complications arise. Streptococcal sore throat: Sulfa drugs, given after exposure, usually protect for a short period. Sulfa drugs or penicillin may be used in treatment. Isolation during period of communicability (usually 2 weeks) for streptococcal infections. Immunity usually follows one attack of scarlet fever but does not follow one attack of streptococcal sore throat.	

† Direct contact means directly from person to person. Indirect contact means indirectly through handling, eating, or drinking anything soiled by discharges from the sick person or a carrier.

COMMUNICABLE DISEASES OF CHILDHOOD (continued)

Rheumatic Fever	Smallpox	Tetanus	Whooping Cough
Unknown. May follow an upper respiratory tract infection caused by hemolytic streptococcus.	A virus: Present in the sores (pocks) on the skin, and mucous membranes lining body openings (and so in discharges from the mouth, nose, bowels, and bladder).	Tetanus bacillus: Present in infected wound.	Pertussis bacillus: Present in discharges from the mouth and nose.
Unknown.	By direct and indirect contact.† (Except for short distances, transmission through the air unlikely.)	Through the contamination of wounds (especially puncture and laceration wounds) with dust and animal manure containing tetanus bacilli.	By direct and indirect contact.†
Unknown. May be a period of from several days to 4 weeks between an acute streptococcal respiratory infection and onset of rheumatic fever.	From 7 to 16 days, commonly 12, rarely 21.	From 4 days to 3 weeks, occasionally longer.	From 7 to 10 days, not more than 21 days.
Not in itself communicable but the streptococcal infection usually preceding it is communicable.	From first symptoms until all scabs and crusts have disappeared. Most contagious in early stages.	Patient not infectious.	From 7 days after exposure to 3 weeks after spasmodic coughing stage begins. Is most catching before the whoop appears, when it seems to be only a cold.
First attack usually occurs in children of about 5 or 6 years. Recurrent attacks common. Winter and spring.	Children and adults, especially young adult males. Occurs in epidemics where vaccination is not enforced. Winter.	Most frequent in young men whose occupation exposes them to infection, but anyone may contract it. Summer.	Most common in children less than 5 years, but all ages susceptible. Variable, but mostly in spring.
No specific preventive. For general measures, see pages 29-30. Immunity does not follow one attack. On the contrary, one attack increases susceptibility to future attacks.	Preventive: Smallpox vaccination. See page 25. Isolation during period of communicability. Immunity usual after one attack.	Preventive: Tetanus Toxoid. Temporary immunity for about 10 days conferred by tetanus antitoxin after receiving wound. Tetanus antitoxin also used in treatment of tetanus. See page 31. Permanent immunity does not follow one attack.	Preventive: Whooping cough vaccine. Several different substances available for giving temporary immediate protection and to make an actual attack milder. See page 33. Exclusion from school and public places. Immunity usually follows one attack. Second attacks rare.

† Direct contact means directly from person to person. Indirect contact means indirectly through handling, eating, or drinking anything soiled by discharges from the sick person or a carrier.



GERMAN MEASLES

(Rubella)

German measles is a very common contagious disease which occurs mostly in young children. It begins with signs of a mild cold, usually a slight fever, and a sore throat, followed by a rose-colored rash which quickly spreads over the entire body. The typical signs are tenderness and enlargement of the lymph glands, particularly those in the neck, just behind the ears.

As a rule, German measles is a mild disease with no distressing symptoms or complications. It lasts only for about one to three days, during which the child should be kept in bed.

German measles is a specific disease, but its rash may be confused with that of measles or scarlet fever. That is one important reason for having an early diagnosis.

INFANTILE PARALYSIS

(Poliomyelitis)

Infantile paralysis is caused by a virus which attacks the central nervous system. It is most common among children, although anyone may get it. Not every person attacked by infantile paralysis becomes paralyzed. Of those who are paralyzed, many show a complete and early recovery. Only about 15 or 20 percent have permanent paralysis. Mild cases are often responsible for spreading the disease.

A child coming down with infantile paralysis may become drowsy or restless, feverish, irritable, and may show signs of a cold. He doesn't want to be moved. He is likely to vomit once or twice and may complain of headache, or pain in the back, or behind the neck. More significant are a sore, stiff neck and spine and pains in the back, arms, and legs. Many of these symptoms are not unlike those in the common upsets to which children are subject, but the most characteristic sign is the stiffness which makes it impossible to bend the spine and the neck forward.

Sometimes early symptoms may be very mild, and yet within from 24 to 72 hours the child may be unable to move an arm or a leg. Again he may be extremely ill in the first stage of this disease but develop little or no paralysis.

Early treatment under a skilled physician, nurse, and physical therapist, and proper controlled rest and motion of the affected muscles will help to speed recovery and may prevent or lessen crippling aftereffects.

If an attack of infantile paralysis leaves a child with paralyzed muscles, proper treatment usually brings about improvement during the first year and may prevent permanent deformity. The treatment requires much patience and perseverance on the child's part, and encouragement from the parents, since it may have to be continued for several years.

Prevention

While there are as yet no specific means of preventing infantile paralysis, various precautions can be taken to protect children from exposure to it. If there is an epidemic of infantile paralysis in your community, keep your children away from movies, parties, crowded trains, and all public gatherings until the outbreak is over.

It is best at such times to keep children away from public beaches and swimming pools. Also, playing in or near streams, lakes, or ditches into which sewage drains may be dangerous and should be avoided, since infantile paralysis virus, as well as the germs of other diseases, have been found in sewage-contaminated water.

Removal of tonsils, extraction of teeth, or other operations in and about the nose, throat, and mouth may open new channels by which the virus can gain entrance to the body and come in contact with nerves. Such operations should be avoided as far as is possible during an epidemic of infantile paralysis.

The manner in which the infantile paralysis virus is spread is still unknown. But to be on the safe side keep the home as clean as possible. Use plenty of soap and water, fight flies, mice, rats, and other vermin, and protect food from flies. See to it that the children pay particular attention to personal cleanliness, especially handwashing. Also guard them from overfatigue and from sudden chilling.

Above all, be alert for signs of illness in your children when cases of infantile paralysis appear in the neighborhood. Look with suspicion upon even minor upsets such as vomiting, constipation or diarrhea, or a slight cold, and do not delay consulting the doctor.

MEASLES

(Rubeola)

Measles, a highly contagious disease caused by a virus, is rarely escaped in childhood. It is to be feared chiefly because of the danger of complications from some other infection.

The acute infections which most often complicate measles are inflammation of the ear and bronchopneumonia, the latter being present in nearly all fatal cases. An ear infection may result in mastoid disease and possibly in loss of hearing. However, complications can generally be avoided if a child has good care during an attack of measles and is not allowed to get up until the physician considers it safe.



A slight fever may be the first sign of measles. Next, the eyes become red and watery and the lower lids may puff up. Within a day or so the signs of a cold with sneezing, running nose, and a tight hacking cough are present. It is during this period that measles is most contagious.

When both the "cold" and the fever are at their height (about three or four days after it is apparent that the child is ill), the characteristic measles rash starts to break out. This rash consists of red spots which may appear first behind the ears, on the forehead, or on the cheeks, and then spread down the body. The spots collect in large red blotches and usually itch. Once the rash is full blown the fever usually falls rapidly, and the patient begins to feel much better. With the exception of the cough, which may last for some time, the signs of a cold generally clear up quickly.

The rash lasts for about five days and then fades in the order of its appearance. After it disappears the skin of the face and body begins to peel in the form of fine, branlike flakes. This peeling lasts for perhaps two or three days, sometimes longer.

An attack of measles may be made lighter by an injection of a protective substance, if given during the incubation period. This light attack will protect the child against the disease in the future.

The protective substances available for making an attack of measles lighter are: convalescent serum, obtained from the blood of a person who has recently recovered from measles; whole blood obtained from adults known to have had measles; placental extract obtained from the blood of women who have had measles; or "gamma globulin," obtained from pooled blood. Gamma globulin is many times stronger even than the blood of those who have had measles.

When you know that your child has been exposed to measles, consult your physician, so that the protective substance may be used promptly if he thinks it advisable.

Prevention

There is no long-term preventive against measles; the only means of long-term protection is to have the disease. However, when one of the protective substances used to make an attack of measles less severe is given within five days after exposure, the disease may be temporarily prevented or made milder. Prevention may be considered desirable for very young or feeble children. If measles has been prevented, the child will not be immune and so may catch the disease later. Ask your doctor about the advisability of giving this temporary complete protection if a baby or a young or delicate child in your family has been exposed to measles.



Protect the eyes from bright light or glare with dark glasses.

MUMPS*(Infective Parotitis)*

Mumps is an acute infection of the salivary glands, characterized by fever and by swelling and tenderness of the glands. The parotid glands, situated one in front of each ear, are the ones usually affected. But the two other pairs of salivary glands, below the lower jaws and the tongue, may also become inflamed, either at the same time or in rotation.

Before the swelling develops, there is usually slight fever and sometimes earache, sore throat, or vomiting. Complications involving the genital organs (testicles or ovaries) may occur. This rarely happens before adolescence.

A child should have medical care even in mild cases to forestall possible complications. He should stay in bed until the fever and acute swelling have subsided.

SMALLPOX*(Variola)*

Smallpox is one of the most easily caught diseases. The common signs and symptoms associated with the onset are chills, intense headache, severe pains in the back, vomiting, rapid pulse, and a quick rise in temperature.

From one to five days later the skin breaks out in red spots, which change first to blisters and then to the typical smallpox pustules. Crusts form over the pustules and fall off in from 10 to 40 days. The eruption is usually more abundant on the face and limbs than on the trunk of the body. In cases of severe smallpox, pitted scars or pock marks are left after the crusts fall off. Mild smallpox rarely leaves scars.

If smallpox breaks out in your community and someone in your family develops the signs and symptoms associated with its onset, call your physician without delay so that other members of the family may be protected by prompt vaccination. Meanwhile keep the patient away from the rest of the family and other persons.

Mild Smallpox. A mild form of smallpox sometimes occurs in certain sections of the country. While it is not particularly disabling, it is fully as contagious as the other types of smallpox and may produce a severe attack of this disease in other persons.

One danger of mild smallpox is that it may be mistaken for chickenpox, and the proper precautions to prevent its spread may be neglected. That is why a prompt diagnosis should be made by the physician.



Prevention

Vaccination prevents smallpox. A successful vaccination usually protects from five to seven years. It is wise to be revaccinated whenever you hear of cases in your locality. See the Immunization Timetable, pages 7-8.

The first vaccination results in one of the two following reactions:

Successful vaccination:

When a vaccination is successful, a small red spot appears about the third or fourth day, gradually increasing to reach its height from the 11th to the 14th day; then it subsides and leaves a typical vaccination scar.

Unsuccessful vaccination (Failure):

When no redness whatever appears within 48 hours the vaccination should be repeated. The failure is usually due to the use of vaccine which has lost its potency or strength.

Revaccination:

Revaccination may result in a typical "take" or a failure, or it may have one of the following results:

1. *Immune Reaction.* Within 48 hours a small red spot appears, then gradually fades. This indicates that immunity still exists from the previous vaccination. There is no telling how long it may last. It may run out within a few months or persist many years. Anyone whose last vaccination resulted in an immune reaction should be revaccinated whenever there is danger of catching smallpox.

2. *Accelerated Reaction* (Vaccinoid). This is a mild form of a successful vaccination which indicates that immunity was weak. It protects against smallpox. It reaches its height from the fifth to the seventh day and then subsides, leaving a small scar.

STREPTOCOCCAL INFECTIONS

(Respiratory)

Scarlet fever and streptococcal sore throat (septic sore throat) are caused by hemolytic streptococci (germs of the coccus family) of several kinds. Some kinds create a rash-producing toxin which causes typical scarlet fever or scarlet fever without a rash. Other strains produce only streptococcal infections of the nose or throat (septic sore throat).

Scarlet fever and streptococcal sore throat are serious diseases which may have dangerous complications or aftereffects, including otitis media, infected glands, and diseases of the heart and kidneys. Such complications may occur even in mild cases, where the fever remains low and the throat is not very sore.

I. SCARLET FEVER

(Scarlatina)

The characteristic signs and symptoms of scarlet fever are a sore throat and a typical rash. A child who is coming down with scarlet fever may, at first, seem tired, restless, and out of sorts, and then develop fever, sore throat, and vomiting. The skin feels dry and hot. These early signs are followed in a day or two by a bright red rash. Little flat red points, close together, appear first on the neck and chest. Soon the rash covers most of the body. The tongue is furred, and under this white coating red spots become visible in the course of several hours. The entire tongue gradually assumes a bright red color (strawberry tongue).

Peeling (desquamation) begins where the rash began or where the skin is thinnest and ends where the skin is thickest, as on the palms of the hands and soles of the feet. Usually, peeling begins during the second week of the disease and lasts two or three weeks longer. The flakes of skin which scale off are no longer considered infectious. In mild cases the rash may disappear in from four to eight hours.



Complications can often be avoided if medical care is obtained early and the patient is kept in bed as long as seems advisable. The doctor may use scarlet fever antitoxic serum or a sulfa drug or penicillin if the case is serious or if complications develop. Skilled nursing care is essential and may be required even after the skin has peeled and the child seems well.

Scarlet Fever Without a Rash. Some people do not have a rash when infected by a rash-producing type of streptococci, because they have developed immunity to the rash-producing toxin.

Cases of scarlet fever in which the rash is missing may go unrecognized because the signs and symptoms seem to be only those of a sore throat, tonsillitis, or an acute cold.

However, scarlet fever without a rash is just as contagious as scarlet fever with a rash, perhaps more so because the danger is not recognized and nothing is done to keep the infection from spreading. A sore throat or an acute cold following exposure to scarlet fever may be scarlet fever, even though the typical signs do not appear.

II. STREPTOCOCCAL SORE THROAT

(Septic Sore Throat)

Fever and a severe sore throat are the typical signs of a streptococcal throat infection. It is a serious infection which may have complications similar to those of scarlet fever. That is one important reason why every case of bad sore throat should have medical attention.

The physician may think it advisable to use a sulfa drug or penicillin.

Prevention

Several substances are in use for obtaining a brief or a semi-permanent immunity to scarlet fever if it seems advisable to use

them. Protection from scarlet fever does not protect the individual from other streptococcal infections.

Persons who have been exposed to streptococcal infections of the nose and throat can usually be protected by taking repeated doses of a sulfa drug, under the physician's direction.

RHEUMATIC FEVER

The exact cause of rheumatic fever is unknown, but it is frequently preceded by an attack of a respiratory streptococcal infection—scarlet fever, a bad cold, or tonsillitis. Among other factors which contribute to its onset are frequent chilling, damp or overcrowded living quarters, or a poor diet. While not strictly classifiable as a communicable disease, it seems desirable to include it in this volume, as stated in the Foreword.

Rheumatic fever is not spread by direct or indirect contact—like measles, for example. Healthy children may play with a child who has or has had rheumatic fever without danger of contagion. This leads to the belief that the children who get rheumatic fever are especially susceptible to it, and that this susceptibility is inherited.

The first attack of rheumatic fever is likely to strike a susceptible child when he is about 5 or 6 years old. Some of the signs and symptoms which accompany it are failure to gain weight, poor appetite, pallor, repeated nosebleeds, low persistent fever, and frequent complaints of pain in the arms, legs, or abdomen.



Among the more definite signs of rheumatic fever are painful, inflamed joints. If a child gets irritable without good reason, begins to cry easily, doesn't act like himself, or develops nervous habits, a physician should see him. Chorea, a less frequent sign, causes uncontrollable twitching or jerking of the face, arms, or legs, and emotional disturb-

ances. Children with these symptoms may not have chorea (St. Vitus's dance), but their condition makes an examination advisable in any case.

The Care of the Child

The seriousness of rheumatic fever is due to its effect on the heart. In nearly all attacks there is some heart involvement. With recovery from the acute attack, many individuals are left with a damaged heart. If further attacks can be avoided, this damage may eventually be wiped out or remain so slight as not to interfere with full, normal activity. With care in choosing work and play, people with rheumatic heart disease, even many with severely damaged hearts, can live reasonably active and useful lives.

A child with rheumatic fever should not be allowed to get up until the physician permits. It is vitally important that the heart be spared all unnecessary work for as long as the disease is active and for the period of convalescence afterwards. The physician is the only one who can judge when it is safe to let the child get up, and his directions should be followed exactly, no matter how well the patient feels or how slight the attack seems. Good nursing care is important. In communities which have a visiting nurse service, a visiting nurse can be of great help to the patient and the doctor.

As convalescence progresses, it may become quite a problem to keep a child reasonably content to stay in bed. The child should be helped to understand that staying in bed is temporary, and that the things he can do later on depend largely on doing now exactly what the physician wants him to do. If visiting nurse service is available and the nurse is coming in she may be able to help find ways of keeping the child occupied. She will know of other services available to bedridden children, such as home teachers,



who help a child with his school work, and other trained workers who teach games, handicrafts, and all sorts of skills and amusements. See also, "Diversions During Convalescence," page 12.

Recurrences of Rheumatic Fever

One attack of rheumatic fever does not protect a child from future attacks, as, for example, one attack of scarlet fever does. Many children have only one attack, but others are likely to go on having them. During the teens, recurrent attacks often become fewer and fewer and, in many cases, at about 15 or 16 years of age they stop altogether. In this sense, many young people do "outgrow it." However, adults can and do have rheumatic fever, some even for the first time, although most attacks in adults are believed to be recurrences of attacks which began in childhood.

Preventing Recurrences

Every effort should be made to build up the health of a child who has once had rheumatic fever. He should eat enough of the right kinds of foods, get enough rest, play, and sunshine, and do everything which will help to maintain good health. If he is in good condition he will be better able to resist respiratory infections which frequently seem to precede the initial attack and recurrences of rheumatic fever. He must take unusual care also to keep away from anyone with a cold or sore throat and to protect himself against chilling and getting wet. He should have frequent medical examinations.

In some cases, the sulfa drugs appear to be useful in preventing recurrences. The physician may prescribe such treatment.



TETANUS

(Lockjaw)

Tetanus is a serious disease caused by the toxin manufactured in a wound by the tetanus bacillus. It is characterized by painful muscular contractions and rigidity of the jaws.

Tetanus bacilli are found in animal manure and in soil and street dust containing particles of manure. The contaminated wounds which favor the growth of the bacillus are deep wounds caused by narrow pointed instruments, lacerated wounds, and wounds made by firearms and explosive fireworks. A person with a wound of this kind should see a doctor without delay. Tetanus antitoxin administered shortly after receiving a wound carrying the danger of tetanus usually prevents its development in unimmunized persons.

Prevention

Protection against tetanus can be built up through repeated injections of tetanus toxoid. This treatment should be given first in infancy, followed at intervals by reinforcing doses and after every injury carrying the danger of tetanus. The injections are given frequently in combination with whooping cough vaccine or diphtheria toxoid, or in a triple combination of diphtheria toxoid, tetanus toxoid, and whooping cough vaccine. An immunized person should carry with him at all times a record of his immunization for the doctor's information in case of injury. See the Immunization Timetable, pages 7-8.

WHOOPING COUGH

(Pertussis)

Whooping cough is a serious, highly contagious disease. More than 95 percent of the cases occur among children less than 5 years of age. It is dangerous chiefly because during an attack the very young or delicate child becomes so weak that he may get pneumonia, tuberculosis, or some other disease.

Whooping cough usually starts with a tight, dry cough which, in typical cases, grows steadily worse, and becomes particularly troublesome at night.

As the cough and other symptoms grow worse the disease enters the second stage. This is called the stage of spasmodic

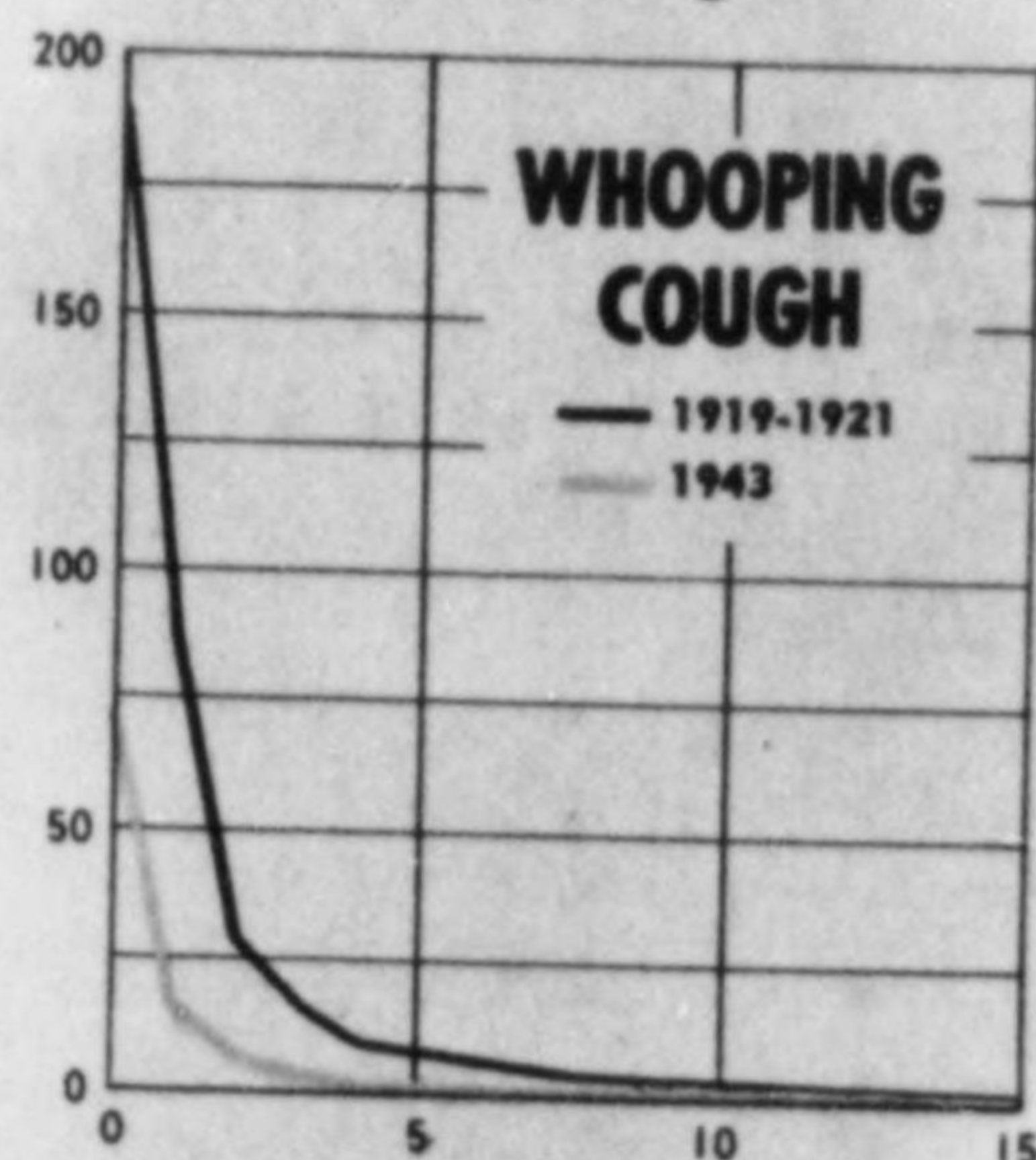
coughing, because the child may have several hard coughing spells a day. In mild cases there may be four or five coughing spells; in severe cases, many more. Often the cough ends in a whoop, but sometimes the whoop is lacking. The spasms of coughing may continue until the child vomits or until he sneezes or spits out a thick, sticky plug of mucus.

Coughing and vomiting last for about three weeks, but may continue for six weeks or longer. As the cough begins to lessen in frequency and severity, convalescence begins. In this period every effort should be made to help the child regain strength which may have been lost during the illness.

Medical Treatment. If the doctor considers it advisable, he may try to lighten or shorten the attack by injecting one of the protective substances available for this purpose. The physician also can do much to make the sick child more comfortable and to guard against the serious effects of whooping cough.

The child loses weight and his strength is severely taxed by violent coughing and frequent vomiting. He requires special care to build him up while he is ill and during convalescence.

Diet—Simply prepared foods are usually advised—for example, milk, soft-boiled or coddled eggs, cream soups, milk toast, custard and other simple desserts, cooked whole-grain or enriched cereals, fruit juice, and green-leaf and yellow vegetables. Cod-liver oil or some other vitamin A and D preparation, if omitted during acute illness, should be resumed as soon as possible in convalescence. If vomiting is severe, small amounts of food may be given immediately after a spell of coughing.



Whooping cough mortality, per 100,000 white children less than 15 years, United States, 1919-21 and 1943.

Rest—Plenty of rest is needed. After the fever goes down, it may not be necessary for the child to stay in bed, but he needs several extra hours of rest daily. If coughing is severe, improvement will be more rapid if the child is kept in bed.

Do not allow the child to return to school or to resume his usual activities until the doctor says it is safe to do so.



Sunshine and Fresh Air—Rest periods and mild exercise out of doors on sunny days, especially during convalescence, may be permitted if care is taken to prevent chilling. In cold, windy, or wet weather it usually is advisable to keep the child indoors.

Avoiding exposure—A child who is worn out from an attack of whooping cough is in particular danger of catching colds or other diseases to

which he may be exposed and it is best to keep him away from other people as much as possible. No one who coughs or sneezes or seems to have a cold or who has not had whooping cough should be allowed to go near him. Under no circumstances should he be taken to any public gathering, or allowed to travel on any public vehicle.

Coughing Spells—Coughing is induced in part by overactivity and excitement. The physician may prescribe a sedative to reduce coughing. The parent or other adult can assist the child in a spasm of coughing by standing behind him and placing one hand on his abdomen and the other on his forehead, with his head bent over a basin. Holding the child's arms above his head may ease or prevent a spasm of coughing.

Prevention

Whooping cough can be prevented by immunization. It takes about four months for protection to develop and it lasts for several years. See Immunization Timetable, pages 7-8.

If a baby or young child is exposed to whooping cough before he has been vaccinated against it, he may be protected against that particular exposure. Several substances are available to give temporary, immediate protection and also to make an attack of whooping cough less severe. Your doctor will use the one he prefers.

THE COMMON COLD

Although colds are common at all ages, they can be much more serious in babies and young children than in grown-ups.

The specific cause of colds is uncertain, but it is thought to be one or more viruses. Colds are "catching," in the same way that many other communicable diseases are, by direct and indirect contact. Anything which tends to lower body resistance—not eating enough of the right kinds of foods and lack of rest, for example—increases a child's susceptibility to colds. Diseased tonsils and other defects in the nose and throat may be contributing factors.

Sniffles, sneezing, coughing, tickling, or soreness in the throat are some of the signs or symptoms both of a cold and of the early stage of most of the communicable diseases discussed in this booklet. If they are followed by chilliness or convulsions, fever, and aching it may be more than a cold—measles, perhaps, or scarlet fever, or some other childhood infection.

When a child shows signs of a cold, he should be put to bed, kept warm and quiet, and separated from other people, especially other children. If the cold does not clear up quickly, a physician's advice should be obtained.

A cold in a baby may be a serious thing. There is much more likelihood that the infection will spread to the lungs or ears and complications develop, for example, bronchitis, pneumonia, or otitis media (inflammation of the middle ear).

Babies and young children should be kept away from persons who have colds, and from crowded places, like stores, buses, and trolleys. If a mother who has a cold must take care of her baby, she can give the child some protection by wearing a gauze mask or large clean handkerchief over her mouth and nose and by washing her hands with soap and water before handling the baby or preparing its food.

When a child has even a mild cold, his parents should not allow him to mingle with other children. It is their responsibility to protect the child's playmates from exposure. This one precaution alone would do much to check the spread of colds and other infectious diseases.

DEFINITION OF TERMS

- Antibody:** A substance produced by the body cells to fight the germs of a specific disease.
- Antitoxin:** A substance produced in the blood or other body fluids which counteracts the toxin of a particular disease germ. Antitoxin may be artificially prepared and used in the treatment of disease or to provide temporary immunity to infection.
- Bacillus (plural, bacilli):** A rod-shaped bacterium.
- Bacterium (plural, bacteria):** A plant consisting of a single cell. Some bacteria are harmless or useful; others cause communicable disease.
- Carrier:** A person who has in his body the germs of a communicable disease and can spread it, although he shows no signs of the disease.
- Communicable disease:** Any disease caused by a living germ or virus, whatever may be its means of transmission from the sick to the well; an infectious disease.
- Contagious disease:** A disease caused by a living germ or virus which is spread only by contact with infectious material, that is, with discharges from the body of an infected person transmitted either by direct contact with him or by contact with anything soiled with his discharges. For example, measles is a contagious disease, whereas malaria, which is spread by the bite of the female *Anopheles* mosquito, is communicable but not contagious.
- Contaminated:** Containing germs, viruses, or other organisms capable of causing disease.
- Convalescence:** The period which begins when the fever and other signs and symptoms of acute illness disappear and ends with complete recovery.
- Diagnose:** To determine the nature of the disease from which a person is suffering.
- Disinfect:** To destroy germs and other infectious organisms by the use of heat or chemicals.
- Disinfection, terminal:** The act of disinfecting at the end of an illness.
- Endemic:** The almost continuous presence of a disease in the population.
- Epidemic:** A sudden increase of limited duration in the prevalence of a communicable disease.
- Gastric:** Pertaining to the stomach.
- Germ:** A living organism capable of causing disease.
- Globulin, gamma:** One of the substances in the liquid part of blood which is used to give temporary protection against measles.
- Immune:** Protected against a particular disease.

- Immunity:** Resistance to infection. Immunity may be resistance to infection in general (nonspecific), or to a particular disease (specific).
- Immunization:** The treatment by which a person is made immune.
- Incubation:** The period between the entry of disease germs into the body (infection) and the first signs of the disease.
- Infection:** The entry and multiplication of a living organism (germ, virus) in the body of a human being or animal.
- Isolation:** The separation of an infected person from other persons for the period during which a disease is catching, in places and under conditions which will prevent the spread of the disease.
- Mucus:** The secretion from glands in the mucous membrane.
- Mucous membrane:** The thin tissue lining the throat, the nose, and other cavities and tubes of the body which have external openings.
- Otitis media:** An inflammation of the middle ear.
- Placental extract:** A substance made from placentas (afterbirths) which is used to give temporary immunity against measles and some other diseases.
- Quarantine:** The limitation of freedom of movement of persons who have been exposed to a communicable disease, for the longest incubation period of that disease.
- Schick Test:** A test for susceptibility to diphtheria.
- Serum, blood:** The clear liquid portion of blood, separated from its more solid elements.
- Serum, convalescent:** Immune serum obtained from the blood of persons who have recently recovered from an attack of the disease.
- Serum, immune:** Serum obtained from the blood of a person who is immune to a particular disease or of an animal who has been immunized against it.
- Streptococcus (plural, streptococci):** A germ belonging to a family of round bacteria called cocci.
- Susceptible:** Capable of catching a particular disease.
- Toxin:** A poisonous substance produced by disease germs.
- Toxoid:** A weakened toxin (poison) used to immunize a person from the strong toxin produced by the germs of a specific disease, as diphtheria toxoid.
- Vaccinate:** To inoculate with any substance which gives long-term protection against a particular disease.
- Vaccine:** A substance used to produce immunity to a specific disease.
- Virus:** A cause of communicable disease which is so small that it cannot be seen under an ordinary microscope and which can pass through the finest filters yet made. Its structure is much simpler even than that of a one-celled plant or animal.

Record of Immunization Dates

(SURNAME)	(GIVEN NAME)	(GIVEN NAME)	(GIVEN NAME)	(GIVEN NAME)
Name				
Birth Date				
Birthplace				
Diphtheria immunization, first				
Second				
School age				
12 Years of age				
Smallpox vaccination, first				
School age				
Other				
Tetanus immunization, first				
Other				
Whooping Cough immunization				

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CHILDREN WITH SPECIAL HEALTH PROBLEMS

*Educational Adaptations in
School, Home and Hospital*

Report of the Committee
on Educational Adaptations for Children with
Special Health Problems

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*Educational Adaptations in
School, Home and Hospital*

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This publication is a report of the Committee on Educational Adaptations for Children with Special Health Problems, appointed by the National Tuberculosis Association. Special recognition is given to Dr. Charles C. Wilson who served as Chairman of the Committee and was largely responsible for the preparation of the manuscript; to Dr. Herbert R. Edwards for writing the section on tuberculosis, and to Dr. George M. Wheatley for the discussion on rheumatic fever.

Children with Special Health Problems replaces an earlier pamphlet, *The Physically Below-Par Child*, issued in 1940 by the National Tuberculosis Association.

INTRODUCTION

AMERICAN education is committed to a policy of education for all children and youth. The fulfillment of this policy for that minority group of children with mental or physical handicaps is a real challenge to public education. It is to the lasting credit of our public school system that this challenge has been faced almost from the time of development of our public school system. In many localities and by various administrative measures, some education has been made possible for a large number of handicapped children. In large urban systems, specialized departments have been created with trained teachers and special facilities. In sparsely settled areas, even in many one-room schools, good teachers have adapted their teaching to meet the needs of the pupil with a physical or a mental condition which would otherwise prevent him from engaging in the program provided for the majority.

Although the adaptation of education to the needs of individual children is agreed to in principle, there are still many localities where this policy has not become a reality. It is the purpose of this publication to focus attention on the problem in general; to discuss certain physical handicaps and conditions; and to suggest desirable educational adaptations for children with various kinds of special health problems. We hope thereby to strengthen existing educational programs for handicapped children and to encourage school systems everywhere to develop methods which will permit all educable children to enjoy the benefits of appropriate educational programs.

Children with special health problems are those who need temporary or permanent adjustment of their educational programs, and possibly additional or intensified services, if they are to receive the greatest possible value from the opportunities offered by schools. Among such children are the crippled, the deaf, the


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hard-of-hearing, the blind, and those with severe visual defects. These groups will not be considered in this publication because rather complete information concerning their care and education is currently available in books and pamphlets. Attention here will be concentrated on the problems of children suffering from tuberculosis, malnutrition, rheumatic fever and other cardiac disabilities, diabetes, allergy, epilepsy, as well as those convalescent following illness or operation.

The child's health needs come first. A decision has to be made on whether he can be cared for best in a hospital, in a convalescent home, in school, or in his own home. Then provision needs to be made for his education. For some this will be accomplished by providing special attention in regular classes; others will require education in hospitals or convalescent homes; some will do best in special classes in public day schools; still others will be so severely handicapped that, at least for some time, instruction in their own homes is the best means of education. Through flexible programs adapted to specific situations and particular children, schools must meet the challenge of boys and girls who have special health problems.

The necessity for a careful, critical, and constructive analysis of the needs of children with special health problems is accentuated by changing medical and educational concepts, some of which require that present-day programs be different from those recommended in the past. For example, in former years some communities attempted to meet the problems of undernourished children and those suspected of having tuberculosis or of having been exposed to this disease by enrolling them in open-air classes or sending them to summer camps. Modern views on nutrition, tuberculosis, and ventilation have caused the traditional open-air class to be almost universally abandoned. Similarly, it is now



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accepted that, although camp experience is excellent for the average child, it is not a recommended method of combatting tuberculosis.

Changing concepts, too, of the function of the school health service have led to a better appreciation of the effect of this program on the health of the child. As a result there is developing, on the basis of a better medical understanding of the child's condition, more flexibility in adjusting the school program to meet the health needs of the child.

Because an understanding of various health problems is fundamental to making appropriate adaptations, considerable attention will be given to present medical concepts of some of the more common health problems of school children.

CHARLES C. WILSON, M.D., *Chairman*

VIEWPOINTS ON SELECTED HEALTH PROBLEMS

BRIEF statements are here presented on present-day viewpoints concerning (1) tuberculosis, (2) nutrition, (3) rheumatic fever and heart disease and (4) a miscellaneous group of problems including convalescence, diabetes, allergic conditions, and epilepsy. None of these can be considered fully, but sufficient information will be presented to help teachers and prospective teachers understand why educational adaptations are necessary for children with these conditions.

Tuberculosis

Tuberculosis, a communicable disease caused by the tubercle bacillus, is steadily decreasing in this country in nearly all age, sex, and racial groups. It is becoming definitely less and less a problem in the preschool age, and the pre-adolescent period continues to be characterized by a latency in the development of the disease following infection. Infection, however, is always dangerous, and it should be our prime objective to prevent infection by the tubercle bacillus at any age period and at any time during the life cycle.

Human sources of infection are by far the most common, and spread occurs by intimate personal contact with an open case of pulmonary tuberculosis. It is of the utmost importance that the infectious patient, usually an adult with pulmonary tuberculosis, should be removed from contact with members of his family or the public to whom he may transmit his infection. Infection with bovine bacilli through contaminated milk is practically nonexistent in this country today due to the rigorous tuberculin testing of cattle and the pasteurization of milk supplies.

Infection with the tubercle bacillus is manifested by a positive reaction to the tuberculin test. The majority of persons infected with the tubercle bacillus do not develop clinical or fatal disease, nor does this infection give absolute protection against subsequent infection. Since the period between the date of infection and the development of clinical disease may be months or years, infection occurring in pre-adolescents, when the child has an apparent marked resistance to the disease, may develop into a manifest lesion in adolescence or early adult life.

Determination of clinical tuberculosis is achieved by chest X-ray and careful clinical examination of those individuals with


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evidence of infection on the basis of a positive tuberculin test. An ideal tuberculosis control program envisions an annual tuberculin testing of each individual from birth throughout life and an annual chest X-ray of positive reactors. Such a program is impossible of accomplishment for most communities. A more practical solution is a routine chest X-ray for those fifteen years of age or older. The tuberculin test, if positive, may add valuable diagnostic information.

A child with only a positive tuberculin test, or with X-ray evidence of a well-healed lesion, may engage in normal activities of children of similar age without danger. Ideally, such a child should have periodic roentgenograms to detect any possible change in an apparently healed scar or the development of a new lesion.

A child exposed to an active case of tuberculosis in the home, but without clinical evidence of disease, can follow normal activities. However, he should be periodically examined to detect any untoward changes that may appear.

The child with any form of active tuberculosis has no place in the general classroom; most of these children should be treated in a hospital. The chronic character of tuberculosis necessitates a long period of treatment during which time the child is usually able to resume gradually his educational pursuits before he is ready to leave the hospital. Provision for educational opportunities is most valuable as a method of maintaining the child's morale and in the interest of obtaining his complete rehabilitation as early as possible.

Generally speaking, the child with evidence of toxemia — rise in temperature or other evidence of a progressive or extensive disease — should be permitted to enroll for classwork only after the active phase of his disease has subsided and only if there is



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evidence that he is holding his own. It is impossible to categorize here the exact criteria that must be met. Each child is an individual problem and must be carefully appraised by a competent medical authority.

It follows that the hospital must be staffed with teaching personnel and equipped with those educational facilities essential to meet the widely varying needs of this type of child. In most hospitals providing treatment for the tuberculous child, there will be a number of children who can be assembled in classes for group instruction. Likewise, there will be some children for whom group activities are not suitable but who will benefit from bedside instruction.

In considering the provision of educational assistance to the child in the home, it must be assumed that there are qualified home teachers to provide such service. Teachers assigned to such duties should be required to show a positive reaction to the tuberculin test, for it is safer for such persons to be with tuberculous children. The teachers should have periodic chest X-rays.

Children with certain types of tuberculosis can be treated properly in the home under competent medical supervision. They include the following:

1) *Patients with active primary tuberculosis.* A number of children with primary tuberculosis are asymptomatic and non-infectious but require reduced activity during the healing phase. These children can best be provided for in the home. As a rule, they are able to carry out regular assignments in their educational regime and are much better off if their mental activities are channeled into a form of productive activity.

2) *Convalescent patients.* Among these patients are those who have undergone a period of treatment in the hospital and have reached a stage of arrest. They are noninfectious but still


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require time to readjust to normal activities. Others may have left the hospital for a variety of reasons before their disease reached the stage of arrest. They may either give evidence of a low-grade activity or they may be in a definitely regressive stage. In both instances, very careful medical appraisal is essential to determine the type and amount of educational activity to be pursued.

Before children in either of the above categories return to normal school activities they should satisfy the criteria of arrest of their disease — stability of lesion by roentgenogram, absence of symptoms, and negative bacteriological findings for at least six months. Such children, when they do return, are best advised to refrain from competitive athletics, physical education classes, or other form of strenuous exercise. Consideration should also be given to the time and difficulties of transportation from their homes to the school and back, as this activity alone may be far more taxing on their strength and reserve than the actual activities in the classroom.

No child with positive sputum or positive gastric washings should be allowed to re-enter the classroom.

### **Nutrition**

Because of the intimate relationship between good nutrition and optimal growth and development, schools of today are greatly interested in the nutritional status of pupils. This interest is demonstrated by the inclusion in the health service program of specific procedures for appraising the nutritional status of pupils and the integration of instruction concerning foods and nutrition with the general health instruction program. Such procedures are supplemented by individual counseling of pupils with nutritional problems and the enlistment of aid from other community agencies when necessary to help either the pupil or his family. School



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lunches provide nutritious meals for children who must eat at school or who cannot obtain an adequate noonday meal at home.

Each child should be weighed and measured periodically, but the findings should be compared with his previous weight and height to determine the amount of growth rather than used as criteria for determining nutritional status. Used in the latter manner, they give inaccurate, misleading results. Authorities now agree that weight and height are not accurate criteria of nutrition; underweight is not necessarily a symptom of malnutrition, nor are all malnourished children underweight. It is unscientific and unfair to set average weight as a goal for all children.

Efforts to improve nutrition must be based on careful consideration of the numerous and diverse factors which influence nutrition. Although the quantity and the quality of foods eaten are important, there also are other factors of great significance. Poor nutrition may be due to disease conditions, to remediable defects, to chronic fatigue resulting from inadequate sleep, or to too much activity. Frustration, fear, worry, and depression are emotional factors which detrimentally affect nutrition. Only by studying the entire child and all the factors that influence his nutritional status can an intelligent program for effectively improving his condition be planned.

Many studies have shown that a considerable number of children do not regularly eat the foods that are needed for optimal growth and nutrition. This is true of children of all economic and social levels. From a preventive point of view, these children should receive help before they develop clinical evidence of dietary deficiencies. A study of children's diets should be an integral part of the school health education program. School efforts to improve food selection should extend into the community to create an awareness of the importance of adequate diet for all citizens.

Rheumatic Fever

The exact cause of rheumatic fever is unknown, but in susceptible individuals an attack is frequently preceded by a respiratory streptococcal infection — scarlet fever, a bad cold, or tonsillitis. Among other factors which lower resistance to rheumatic fever are frequent chilling, damp and overcrowded living quarters, and a poor diet.

Rheumatic fever — unlike such a disease as measles — is not spread by direct or indirect contact. Healthy children may play with a child who has or has had rheumatic fever without danger of infection. Children who get rheumatic fever appear to be especially susceptible to it. This susceptibility is thought by some to be inherited.

The first attack of rheumatic fever is likely to strike a susceptible child when he is about five or six years old. Early signs and symptoms which accompany it may be vague, such as failure to gain weight, poor appetite, pallor, low persistent fever, and frequent complaints of pain or soreness in the arms, legs, or abdomen. Among the more definite signs of rheumatic fever are painful, inflamed joints.

If a child gets irritable without good reason, begins to cry easily, doesn't act like himself, or develops nervous habits, a physician should see him. Chorea (St. Vitus' dance), a less frequent sign, causes emotional disturbances and uncontrollable twitching or jerking of the face, arms, or legs. Children with these symptoms may not have chorea, but their condition makes an examination advisable in any case.

After an attack of rheumatic fever a child may be left with some scarring of the heart, which is known as rheumatic heart disease. In nearly all attacks there is some heart involvement. On recovery from the acute attack, many individuals are left with damaged


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hearts. If further attacks can be avoided, this damage may be so slight as not to interfere with full, normal activity. The child who has had rheumatic fever can usually live a normal life and take his part in the activities children of his age enjoy and need even if he has developed rheumatic heart disease. Many with severely damaged hearts can live reasonably active and useful lives.

The treatment of rheumatic fever is essentially rest in bed until signs of the illness have subsided. Usually this is best accomplished at a hospital or special institution for rheumatic fever where the child can stay long enough to recover fully and where he will have optimum living and dietary conditions to develop resistance to the factors which contribute to the occurrence of the disease. As noted previously, home living conditions may be important contributory factors. Convalescence is often prolonged; in some cases it may be one or two years before the child is fit to return to his home environment. It is obvious that during this time his educational needs must be met. The same criteria which guide the education of the individual in an institution because of tuberculosis can apply to one whose presence there is due to rheumatic fever. In brief, the type of educational training given should be determined in each particular case by a competent physician in consultation with a teacher.

When a child with rheumatic fever is cared for at home, a visiting nurse can be of great help because good nursing is important for effective care.

As convalescence progresses, it may become quite a problem to keep a child reasonably content to stay in bed. This is more difficult at home than in an institution because in the latter the child has the companionship of those who also must stay in bed. The child should be helped to understand that staying in bed is temporary and that the things he can do later depend largely on



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doing now exactly what the physician wants him to do. The local board of education should be requested to provide a home-teacher for the convalescent child. In addition to helping him with his studies, the qualified home-teacher will be able to carry forward a well-rounded educational program, including not only academic training but also crafts, games, and other forms of recreation.

A child with rheumatic fever should not be allowed to get up until the physician permits. The physician is the only one who can judge when the child may get up safely, and his directions should be followed exactly, no matter how well the patient feels or how slight his attack seems.

One attack of rheumatic fever does not protect a child from future attacks as, for example, one attack of chicken pox does. Many children have only one attack, but others are likely to have repeated attacks. During the teens, recurrent attacks often become fewer and fewer and, in many cases, they stop entirely at about fifteen or sixteen years of age. In this sense, many young people "outgrow it." However, adults can and do have rheumatic fever, although most attacks in adults are believed to be recurrences of attacks which began in childhood.

Every effort should be made to build up the health of a child who has once had rheumatic fever. He should eat enough of the right kinds of food; get enough rest, play, and sunshine; and do everything which will help to maintain good health. If he is in good condition, he will be better able to resist respiratory infections which frequently seem to precede the initial attack and recurrence of rheumatic fever. He must take unusual care also to keep away from anyone with a cold or sore throat and to protect himself against chilling and getting wet. He should have frequent medical examinations.

In some cases, the sulfonamide drugs or penicillin appear useful


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in preventing recurrence. The physician may prescribe such medication.

The child who has fully recovered from his attack, as determined by a physician, can, as a rule, return to a normal class program even though he has a damaged heart. The physician should review the child's condition to determine his physical condition and fitness for education under customary school conditions. If the regular school program does not offer adequate facilities, he can properly and profitably work with school authorities to help develop an adequate plan for adjusted education.

A small group, possibly one or two in each 1,000 school children, needs special consideration because of heart conditions. These are children who have severe congenital heart defects or extensive heart damage due to rheumatic fever. These children, whose cardiac function is actually embarrassed, may need to be cared for in a special class or special school. Their stair-climbing needs to be restricted; transportation to and from school may be necessary; and in other ways they may need to be protected from over-exertion.

One function of special programs should be to help a child recover from his fear of physical activity. Many children and parents think that any kind of exertion is harmful if the child has been diagnosed as having heart disease. This concept needs to be replaced by an acceptance of the kind and degree of activity which the physician recommends.

### **Miscellaneous Health Problems**

Among the many health problems with which teachers should be acquainted are convalescence, diabetes, allergic conditions, and epilepsy. These are health problems which may require the teacher to give the child special attention.



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Convalescence. Children who are convalescent from a severe illness, operation, or accident require special consideration. Good meals are of especial importance, for these children may have wasted rapidly during their illnesses. While they may appear normal in every way, they frequently do not have usual amounts of strength, energy, and resistance. Physically, they may tire quickly; emotionally, they may become irritable or depressed. Their programs need to be limited until they have fully regained their health and strength. Extensive absence from school may have caused them to miss much work. Teachers should help them to make up missed school work, but children should not be required to work so hard that their convalescence is retarded. Sympathetic guidance, together with reassurance that they will be given ample time to make up lost work, will facilitate their progress.

Diabetes. Failure of the insulin-producing cells in the pancreas to secrete insulin results in the condition known as diabetes. Sugar is not oxidized completely and accumulates in the blood. Other substances harmful to health also accumulate in the blood.

Treatment for the diabetic child, in addition to dietary regulation, may include the periodic injection of commercially prepared insulin, which acts as a substitute for the insulin not being produced by the non-functioning pancreatic cells. Such treatment allows most diabetic children to live practically normal lives, but overdoses of insulin may result in insulin reaction characterized by weakness, trembling, cold perspiration, and unconsciousness.

Teachers should be aware of children in their classes who are diabetic and should know whether or not they are receiving insulin. The teacher should obtain recommendations from the child's physician or the school physician concerning the child's physical activity. She also should receive instructions concerning procedures to follow if the child shows symptoms of insulin reac-

tion. Frequently the child, on the doctor's recommendation, will carry lumps of sugar or pieces of chocolate to be eaten if he feels weak or faint.

Allergic conditions. Manifestation of particular sensitivity to substances that cause no disorder or discomfort to most persons may be revealed in many different ways. This unusual sensitivity, or allergy, may cause itching of the skin or skin eruptions. Other persons may have headaches or digestive disturbances. Still others may suffer from hay fever or asthma.

Children with asthma may need special attention from the teacher. These children have attacks characterized by difficulty in breathing and will automatically limit their play activities during an attack. Sympathetic consideration should be given to an asthmatic child's desire to refrain from exercise. Frequent absence may require that they be given special help when they return to school. In some instances, when attacks are severe enough at night to interfere with sleep, rest periods at school may be recommended. Specific suggestions should be obtained from the physician caring for the child.

Epilepsy. Sooner or later almost every teacher will have in her class a child who has epileptic attacks. Many children with epilepsy have normal intelligence and experience only infrequent attacks of so mild a nature that the teacher is aware of their occurrence only because the child momentarily gazes into space or fails to maintain awareness of what is going on. In the more severe type of attack, the child may lose consciousness completely and undergo more or less violent convulsions. At the conclusion of the convulsions, the child frequently is fatigued and in need of rest.

When a child suffers an epileptic attack in school, he should receive appropriate first aid from the teacher. There is no need for alarm or excitement, for the attack usually lasts only a short time


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and complete recovery is to be expected. Care during an attack is limited to preventing the victim from hurting himself by knocking his head against a desk, wall, chair, or other object. To prevent him from biting his tongue, a tongue blade or a pencil may be placed in his mouth.

Both serious and embarrassing situations can be averted if the teacher knows which of her pupils are susceptible to epileptic attacks, for then she can explain the attacks to prepare other pupils for what may happen. This explanation should be done in such a way as to help pupils understand that the epileptic needs their acceptance and friendly help.

Children with epilepsy should be under the supervision of a qualified physician. In many instances, medical treatment will reduce the frequency and severity of attacks. When they receive appropriate treatment, most epileptics can attend regular classes.

## PROVIDING APPROPRIATE EDUCATION

**C**HILDREN with special health problems should be provided with programs that will enable them to progress toward educational objectives of self-realization, satisfying human relationships, economic independence, and civic responsibility. Such a program may require a modification of the school routines, enrollment in a special class, or the provision of special services. In some instances it will require the provision of suitable educational opportunities in a hospital, a convalescent home, or in the child's own home.



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## Formulating a Plan

Basic to effective adaptation of an educational program to the particular needs of a pupil with a health problem is a careful study of the whole child. In some schools this study of pupil needs is accomplished through a case conference in which the participants include the pupil's former teacher, the school physician, the nurse, psychologist, parent, and, where available, a director, supervisor, or consultant in special education. The conference may include other persons who have knowledge of the pupil and his condition, and in all cases the advice and counsel of the child's physician should be requested. Other schools use a less formal approach, making one individual responsible for gathering information from all sources and for analyzing the data and formulating a recommendation. Regardless of the procedure used, it is important that information be obtained concerning (1) the pupil's health problem and the disability it produces, (2) his intellectual ability and past school accomplishments, and (3) his home and community environment. With such data, an intelligent decision can be reached concerning the adaptations which should be made in his school program.

## Possible School Adaptations

For the child who is to resume attendance at school, the adaptations may be such that he can enter a regular class. For example, this may be the best procedure for the child who re-enters school after having had treatment for tuberculosis. Similarly, most undernourished children and those with diabetes, allergy, and rheumatic heart disease can be appropriately cared for when enrolled in a regular class *if proper adaptations are made*. Some of the special provisions which may be necessary are:



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1. Attendance for less than the full day — this arrangement may include early dismissal or permission to come to school later than others.
  2. Individual attention and instruction if the child is considerably behind other pupils in his school work
  3. Only mild activity during recesses and physical education periods
  4. Rest periods — preferably on a comfortable cot in a quiet room
  5. Avoidance of stair-climbing
  6. Individual health counseling regarding diet, rest, and related factors. This plan should include help, if needed, in obtaining an adequate diet.
  7. Individual health counseling concerning the need for continued medical supervision
  8. Close observation by the teacher for signs and symptoms suggestive of substandard health
  9. A noon meal adjusted to individual needs and, if indicated, nourishment between meals

In some cases, adaptation of the school program to the needs of a child with a special health problem is achieved best through enrolling him temporarily in a special health class. This is particularly advantageous when a considerable amount of individual attention is needed, when the child's attendance is likely to be extremely irregular, and when the child is in need of a very flexible curriculum or frequent or prolonged periods of rest. Such special class placement should continue in effect only until the child has progressed sufficiently to return to a regular class.

### **Education in the Hospital**

Children who must stay in a hospital over long periods frequently benefit from instruction provided at the hospital. Public schools carry the responsibility of providing the teachers. Naturally, instruction is offered in these circumstances only on the recommendation of the physician. But in certain cases of tuber-



culosis and rheumatic fever and also in other types of sickness requiring prolonged hospitalization, the child needs to be occupied with some kind of mental activity during most of his stay. School work may improve his morale as well as initiate his resumption of systematic education. Since consideration must be given to the avoidance of fatigue, class periods may be brief and infrequent, particularly at the beginning. As progress continues, both the length and the frequency of instructional periods may be increased, always with the approval of the physician. Most hospital teaching can be done in small groups.

### Home Instruction

A child who is homebound for a considerable length of time should receive instruction at home. Visits from a teacher should be no less frequent than twice a week, preferably five times a week, and the amount of instruction and length of assignments should vary according to the doctor's recommendation.

Home instruction at its best is not a satisfactory substitute for school experiences. Consequently, the homebound child should be admitted to a school if, and when, his condition improves to such an extent that school attendance is possible. The child needs to work and play with other children as much as he needs academic education. But until his condition permits this, regular home instruction is the most that the school can provide.

### TEAMWORK BRINGS RESULTS

**A**DEQUATE CARE and appropriate education for children with health problems can best be provided when teamwork characterizes the efforts of parents, physicians, schools, health de-



partments, and members of the hospital staff. Each of these individuals or agencies should understand what the others are doing and how the efforts of all may be coordinated for the benefit of the child.

### **Parent Responsibility**

Parents have primary interest and responsibility for the care of their children. When a child has a health problem, the parent should immediately obtain professional attention for him and keep him under medical supervision as long as is recommended. Parents need to understand the importance of adequate rest and sleep for the growing child, the need for having remediable defects corrected, and the value of preventive inoculations. Every parent should know how to provide an adequate diet for children.

Nurses and social workers who assist in the care of a child with a health problem may help to explain to the parent the nature of the child's problem and the care that he needs. Sometimes the parent will need help in accepting the fact that the child has a severe or a non-remediable condition. In some instances the parent will need specific instructions concerning the home care of the child.

Parents should be concerned with the education provided for their children. They should be encouraged to visit the child's school and discuss with his teacher the type of program provided and how the child is progressing. They can encourage the physician to inform the school concerning his recommendations for the child's care during school hours.

### **The Physician's Role**

Most physicians understand fully that medical treatment is only one aspect of the care of children with the special health problems



dealt with in this report. They should become familiar with the methods used by schools in caring for the child while he is in school and in providing for his education. Physicians should inform school personnel of any special care the child may need.

### **Health Services**

Physicians and nurses who participate in the school health service program have the responsibility of identifying the pupils with special health problems and the further responsibility of seeing that they receive the care they need. This responsibility may involve referring the child for special diagnostic procedures, such as to a diagnostic heart clinic operated by the health department or a hospital. It always requires careful presentation of the child's problem to the teacher and explanation of what the teacher should do about the problem.

In every state there is a public program for crippled children, some of the services of which may be available to children with special health problems. Members of the school health service staff should act in a liaison capacity between the school and other community agencies, including hospitals, that are concerned with the health problems of children.

### **The Teacher—A Key Person**

So far as the schools are concerned the teacher is the key person, not only in educational matters but in various aspects of school health services. She is the one to guide the day-by-day life of the child when he is in school, to detect significant deviations from normal appearance and behavior, and to refer the child for medical advice when that seems needed. She also is the one to see that the school program is adapted to his needs and the one who plans and directs his educational experiences.



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It is obvious that all teachers should receive both pre-service and in-service preparation in the education and care of children with health problems. Those who are to be in charge of special health classes need special preparation for their work. They need to understand the various health problems with which children may be confronted, be familiar with suitable adaptations which can be made for children with these problems, and be acquainted with community agencies which may help the child or his family. Knowledge of these problems will enable her to care for such children more intelligently and more effectively.



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**WHAT EVERY TEACHER SHOULD  
KNOW ABOUT THE PHYSICAL  
CONDITION OF HER PUPILS**

**Pamphlet No. 68**  
(Revised 1945)

**Federal Security Agency  
U. S. Office of Education**



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# WHAT EVERY TEACHER SHOULD KNOW ABOUT THE PHYSICAL CONDITION OF HER PUPILS

By  
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U. S. Office of Education*

**Pamphlet No. 68**  
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## PREFACE

1924-1945

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**T**HIS PUBLICATION is intended primarily as a help for the teacher untutored in the art of protecting and promoting the physical welfare of the children in her charge—a function quite as important and vastly more simple than that of introducing children to the mysteries of the multiplication table or the beauties of “A Midsummer Night’s Dream.” It has seemed best to include also some suggestions for those whose business it should be to prepare teachers and would-be teachers along these lines.

The teacher has come to be recognized as the “keystone” of the health examination service, and no matter how adequate the specially trained personnel of that service, she will always continue to hold this unique, first-line position. She is always present, and the onset of communicable diseases and the development of physical defects do not await the appearance of either nurse or physician. Her importance is increased, however, where, as is too often the case, such special workers are absent or their visits infrequent.

In the 21 years since the original pamphlet by the same title as this present one was issued, the average length of life of the child of school age has greatly increased, and, no doubt, the continual observation of the health of pupils by teachers and the early exclusion of those with communicable diseases have had not a little to do with this increase in longevity. But children are still beset by bacterial hordes and they continue to appear in school with defective eyes, ears, and other organs, due to malnutrition, disease, or to less understood causes.

The highly organized city school with its imposing array of specialists—medical, dental and nursing—will probably find little use for this publication, as it should be able to train its own teachers for the duties here outlined. Where such machinery is inadequate or absent it is hoped that the pamphlet will meet a genuine need.



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## WHAT EVERY TEACHER SHOULD KNOW ABOUT THE PHYSICAL CONDITION OF HER PUPILS

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### IMPORTANCE OF HEALTH APPRAISAL

**T**HE HUMAN BODY is a machine through which the mind works. Every exhibition of mental activity is accompanied by physical activity, and the quality and quantity of mental work depend as certainly upon the condition of the machine by which it is exhibited as do the quantity and quality of work produced by any less complex man-made mechanism with the working of which we are familiar.

These mind-body machines of ours vary greatly in their original capacity for work, just as one type of automobile differs from another; but it would be foolish to expect either a passenger car or a truck to do its best with a flat tire, or when supplied with little oil and inferior fuel, and it is just as absurd for a teacher to expect his best school work from a child who has defective sense organs, who is badly fed, insufficiently rested, or who is depressed by other faulty conditions. There are children who are normally bright and those who are naturally dull, but both the bright and the dull do finer and more persistent mental work when they are physically fit.

It is unfair to the child if he is not put in his best possible working condition, for otherwise he will derive less benefit from his schooling.

It is unfair to other pupils who are held back by the slower progress of children who, if put in good order, would do better work.

It is a waste of energy on the part of the teacher who must labor with dull tools that could be sharpened in some degree.

It is a waste of public funds to permit teachers to work with pupils who cannot profit as much by their efforts as might be the case if the bodily conditions of the children were improved.

In a word, it is a waste of time and money, for all concerned, not to see that every little human machine is given an overhauling upon its entrance to school, put in the best possible condition, and observed from day to day thereafter to make sure that it does not lapse from that condition, or, because of the development of acute disease, become unfit for work or a possible menace to its fellows.

It would be absurd for a teacher of the violin not to instruct his pupils as to the mechanism of the instrument and as to when it is out of tune. The thorough-going training school for teachers will include as a fundamental in its curriculum the close observation of the physical traits of the instruments with which they are to work. The material to be studied is always at hand in the pupils of the training school, and such a course in physical examination may well supplement the didactic work in physiology and hygiene which it will serve to bring home to the student in a practical way.



Nor does it require a long and laborious schooling to prepare the teacher for such physical appraisal. If nice distinctions were to be made and a diagnosis of the conditions found, such would be the case, but these are outside the domain of the teacher and are left to the judgment of the school physician and finally to the decision of the family physician.

While her powers of observation will be sharpened more rapidly by good training, the teacher, with the help of such directions as are herewith offered, can do effective work.

#### THE TEACHER HERSELF

Every teacher, unless she is a rare favorite of the gods, has found herself depressed and delinquent in her daily duties because of discomfort and fatigue due to illness, loss of sleep, lack of proper food, the wear and tear of eyestrain, imperfect hearing, or other cause. Indeed, some of us never measure up to our possibilities because we are unaware of hampering conditions that might be removed or improved.

Every teacher should be aware that the children in her charge are subject to the same sort of conditions which may be quite unsuspected by them or by their parents.

Every teacher knows the importance of continuous attendance. Nothing so interferes with that attendance as does communicable disease. The prompt exclusion of a child who is developing such a disease is a certain way of reducing the number of absentees from such cause and often of shortening the course of the illness of the child promptly removed. Fortunately, the infections do not usually make their appearance until some weeks after the opening of school and the teacher has had time to become fully acquainted with the physical make-up and behavior of her pupils.

#### TOOLS OF HER TRADE

The *eyes* and *ears* of the teacher are the chief tools needed in the study of school children. In addition, she should have one or two vision test cards, a loud-ticking watch if an audiometer is not used by the school, and a thermometer. The latter instrument is to be found in every well-ordered home, but, partly because there are few such homes, it is important that it form a part of the equipment of the schoolroom. Because the use of the thermometer has been connected with the physician or nurse does not at all signify that it cannot be readily used by the teacher. It is especially useful in cases where a school nurse is not available.

A measuring rod or tape and a pair of scales make important additions to the outfit. All such instruments should be accurate.

#### ITEMS FOR OBSERVATION

All of us are in the habit of noting the general physical traits of others—whether the person is tall or short, stout or thin, robust or weak, whether he is deformed, etc. We may note the color of the hair or of the eyes and similar items of lesser moment.



## ITEMS FOR OBSERVATION

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Except for signs of acute illness or communicable ailments, school children can be studied deliberately, for they will be with the teacher some 5 hours a day, 5 days a week.

**GENERAL CONDITION—NUTRITION**

On first acquaintance the observant teacher will be impressed by any child who seems to her sickly, weak, or ill-nourished. An experienced school medical officer remarks: "As there are no definite and reliable standards by which the various factors can be measured, the classification of the state of nutrition of a child will largely depend on the personal experience of the observer." Teachers will hardly differ more than medical examiners in their opinion as to the healthy or unhealthy appearance of a child, and that is what we are considering when we speak of nutrition. The child may be very thin or very fat, but more important are the appearance of languor or weakness, dull eyes, pale lips, muddy skin, cold hands, irritability, disinclination to play, and early fatigue. Children differ widely by heredity and other constitutional conditions, but all too many are not properly fed or rested. Any pupil who exhibits the above traits deserves study.

**CARRIAGE**

In her first observation of the child, the teacher will already have made conscious or unconscious note of his carriage or his usual posture.

As for general bodily form, so for carriage, there is no fixed type; and there is, at a very early age, by heredity or other constitutional influence, a wide variation. We all have, however, a mental picture of what constitutes a normal carriage; and we recognize at once if there is much deviation from it, especially in the drooping of the head, rounding of the shoulders, or projecting forward at the hips. When not due to inheritance or to some bony deformity, such posture is to be taken as a sign of fatigue or general weakness which may come from wrong feeding or some other condition of bad hygiene. A child who is healthy and vigorous will maintain his constitutional carriage under almost any condition of life.

**THE SKIN**

Uncleanliness of the skin and hair should not be tolerated in schools, but this may be taken advantage of at first examination as a guide for the possible presence of parasitic diseases, for these are most likely to be found in connection with dirt. Some parasites, however, attack a clean skin, in particular some strains of ringworm. The common skin diseases are ringworm, impetigo, and scabies or the "itch."

*Ringworm* occurs on the face, neck, or arms, and has at first the appearance of a slightly raised, reddish scaly spot, which later spreads into a circular or oval reddish scaly ring of varying size with a smoother, paler center. There may be one or many "rings."

*Impetigo* is characterized by small or large, brownish or yellowish, usually thick, crusts, apparently stuck upon the face or hands. Large crusts often appear behind the ear.



## WHAT EVERY TEACHER SHOULD KNOW

*Scabies* often attacks the hands first and is to be suspected from scratching by the child or the scratches that result from these efforts to get rid of the itch mite which bores into the skin and sets up an intense irritation. Red points and lines on the skin (other than scratches) especially of the hands and wrists indicate the punctures and pathways of the insect.

It should be kept in mind that *any eruption* is abnormal. When it accompanies acute infection, other signs of disease are usually present or have preceded it. Sudden skin eruptions may be caused by certain foods or even drugs. That very common disease of later school life, *acne*, with its pimples or pustules, is not contagious, but needs attention. The teacher does not have to bother as to causes, for that is something to be investigated by physician, nurse, or parent.

In the more intimate study of the child it is best to follow a systematic order, beginning with the hair and proceeding downward.

## THE HAIR

*Lice* or *pediculi* are no respecters of persons, and though they prefer unclean and unkempt heads, they have a way of "getting around." It should not be forgotten that the creature made famous by Burns was on a "lady's bonnet" and may have been a resident of her own head.

Nits or eggs of the louse will be found as oval, gray bodies, clinging to the hair, especially behind the ears and on the back of the head. These are of great importance as the insects may hatch from them at any time. Examinations can usually be made without the children suspecting what is being done. The frequent scratching of the scalp by the child should lead the teacher to suspect that there is something wrong and an investigation should be made at once.

In schools where *pediculi* are to be expected (where bad conditions of hygiene are known to exist in the homes), the teacher should be daily on the lookout for lice; for it has been found that if there is one infested pupil, one-third of the rest (and possibly the teacher) will soon be attacked. If one member of a family harbors the insects, it will usually be found that the rest are also affected. While often considered simply a sign of uncleanliness, these vermin are by no means harmless to young children, as their presence may lead to infection by dangerous micro-organisms.

*Ringworm of the scalp* is not uncommon. It is communicable and difficult to get rid of and should be suspected whenever the examiner finds small or large, nearly bald patches, with stubby hair, scurf, or crusts.

## THE EYES

The vision of the school child is of the utmost importance, and the stating of such a truism should seem unnecessary. Nevertheless, this importance is constantly overlooked.

There is no excuse for a teacher not to know in a rough but sufficient way whether a child is handicapped by defective eyesight. The following observations should make her suspicious: Mistakes in letters or figures, leaning



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forward when viewing work at a distance on the blackboard or erroneously reading such work, holding books or desk work too close or beyond the usual distance, tilting the head or distorting the face, rubbing the eyes, etc. Complaints of dizziness, headache, or blurred vision, sensitiveness to light, pain or fatigue of the eyes, all indicate some defect of vision as do red or crusted lids or the presence of styes.

Any teacher should be able to detect strabismus or "squint" and note whether the child is "cross" or "wall" eyed. In such a condition the vision of one eye may be excellent, but that of the other is usually bad, and will grow worse unless it is brought into use with the better one. For this reason and because of the handicap from its appearance, strabismus should be treated as early as possible. In testing for this condition, the child is asked to look at a pencil or other object held by the teacher. It will be observed that only one eye is focused upon the object and follows it as it is moved from side to side. The weaker eye looks in another direction.

Whether or not there are signs of visual defect, every child should be tested for his acuity of vision. For this purpose a card with Snellen test letters or one with the letter E turned in different directions is usually employed. Preferably there should be two Snellen cards having different letters so that unfamiliar characters can be used in retesting.

The card should be placed (preferably) so that the child can stand 20 feet from it. If it has a 15-foot line of letters it may be used at this shorter distance when necessary. It should be placed at about the height of the eyes and in a good light which does not shine in the pupil's eyes but comes from the side. If placed at the front of the room, the light on a fair day, from a side window, will usually furnish good illumination.

The cards (which are usually furnished by departments of education) should be kept out of sight and in a clean place when not in use in order that the pupils may not become familiar with the letters.<sup>1</sup>

If there is a suitably lighted hall or vacant room, and the pupils can be taken from their room one at a time for examination, there will be less memorizing of letters.

The Snellen test card shows rows of letters of different sizes, each with an indication of the number of feet distance at which it can be read by the normal eye singly. For children who do not know their letters the card with the letter E printed in different sizes and turned in different directions is used. Some examiners prefer this test at all ages. The pupil is asked to indicate in which direction the arms of the E are pointed.

The test chart being hung as directed, the child should be placed at the desired distance and a piece of stiff card held in front of (not against) one eye, and he would be asked to read the letters, beginning with the larger ones. If he reads all the letters, including those for the distance at which he is placed, it will mean that he is not nearsighted, but he may have some other

<sup>1</sup> The Snellen letters published herewith are taken from a card which may be purchased from the National Society for the Prevention of Blindness, 1790 Broadway, New York City.



visual defect not revealed by this test. Any signs of strain must be taken into account.

If the child reads smaller letters than are expected of the normal eye (as reading of the 15-foot line at 20 feet), it means that his vision is keener than that of the average person. Inability to read the line expected of the normal eye, may indicate not only nearsightedness, astigmatism, defects of the refractive media, corneal scars, etc., but also a fairly high degree of farsightedness. If the pupil cannot read, with either eye, letters smaller than those of the 30-foot line at 20 feet, he should be examined by an oculist, even though signs of eyestrain are not present. Glasses are not an unmixed blessing and may not be needed for such a minor fault of vision, but their application is left to the judgment of the examining physician.

Sufficient time should be used in testing vision though there should be little hesitation in reading the letters if the child understands what is wanted of him. Occasionally a pupil who seems defective on one testing reads perfectly the next day so that it is well to give a child who makes mistakes a subsequent trial provided he does not exhibit signs of eyestrain. If there is a suspicion that the letters have been memorized, they should be read backward or out of order. *It should always be borne in mind that the observation of the daily use and condition of the eyes and of the symptoms that may arise from eye defects is of as much importance as the use of the test card.*

A child wearing glasses should be examined with and without them. Unfortunately mistakes are sometimes made in the making of glasses, and persons are found using lenses which do more harm than good. This may be due to the fact that the glasses were not shown to the oculist before they were worn, or the eyes may have changed if it has been some time since the wearer's eyes were examined.

The teacher should note whether the glasses are bent or twisted as this may seriously affect their usefulness. She should instruct the child in keeping his glasses clean. It should be remembered that eyes may change from year to year and that glasses also may need to be changed in the course of time, if they are to be of most benefit.

For purposes of recording the results of the test of vision, a fraction is used. The distance from the card to where the child stands is always the numerator, and the figures opposite the line of smallest letters which are read without mistake is the denominator. If he reads the 20-foot line at 20 feet, the fraction 20/20 is set down for the eye tested. If he can read only down to and including all of the letters which the normal eye reads at 40 feet, but makes mistakes in the 30-foot line, his vision for that eye is recorded as 20/40. This does not, as it seems, mean that his vision is only half as good as that of a normal eye; it may be considered much better than that; but the method of recording is simple and in general use. If none of the letters can be read at 20 feet, the child should approach the card until



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he can read the largest print. The distance at which he now stands will serve as the numerator for recording.

**EARS**

Next to vision (if not before it) the hearing of the child is of great importance in his school and after-school life. A considerable number of children have impaired hearing, and more are so handicapped than we usually suppose.

The "slowness" or "dullness" or mistakes of a child in his schoolroom responses should make one suspicious of poor hearing.

In the examination of the child a peep into his ears should be made. The presence of cotton or a discharge will indicate actual ear disease, with impaired hearing in that ear.

*The audiometer.*—For testing the hearing an audiometer may be used if available and in perfect condition; there are also the watch and voice tests.

The audiometer consists of a phonograph with special records. The words or numbers given out are transmitted to the pupils by means of earphones and the sounds can be regulated in intensity. It is a complicated machine and should not be employed unless it has recently been put in order and tested for accuracy. The teacher should not attempt to use it unless she has been coached by someone familiar with such testing. Children found defective should be retested, as a large proportion of such pupils give evidence of normal hearing on subsequent trial. Young children and children of foreign origin, or parentage, often seem to have poor hearing because of language difficulties or other causes. There should be no noise in the room or hall when the audiometer is employed.

*The watch test.*—For the purpose of examination a loud-ticking watch is often used. The test should be made in a quiet room and the watch should be heard at a distance of at least 4 feet by the average ear. The teacher should first test the watch for distance if her own hearing is normal. No other timepiece than the one to be used for the test should be in the vicinity of the teacher and pupil.

The teacher should stand behind the child and hold in one hand a card of postal-card size or larger, such as may have been used to cover one eye in the eye test, at the side of the head of the child as a "blinder" to keep him from seeing the watch. The teacher should hold the watch in the other hand with the palm toward the ear and on a level with it. It should be held at first about a foot from the ear, and if heard, then carried about a foot farther; then another foot; and so on.

All of us are given to "hearing things" we are asked to hear or suppose we should hear and children are especially prone to wish to please the teacher by responding "yes" when asked if they hear the watch. It is well, in order to make sure that it is heard, to occasionally carry the watch at arm's length and turn the palm of the hand away from the ear. The distance and the muffling produced by bringing the hand between the ear and the



watch will make it inaudible. If, when questioned, the child answers promptly that he hears when the watch is held at arm's length and with the palm turned away from him, one may be pretty sure that he does not hear, but either misunderstands what is wanted of him or is too desirous of pleasing the examiner. Another explanation and trial should be made.

The watch should always be held at about the level of the head of the child and carried *directly sideward* from the ear. The card in the other hand should be held so that he does not see the watch or the movement of the examiner's arm and hand.

The hearing for each ear can be recorded by using as a denominator the longest distance at which most children hear the watch and, as a numerator, the longest distance at which it is heard by the individual child.

*The voice test.*—The pupil is placed 20 feet away from and with his back to the examiner to prevent his watching the movements of the examiner's lips. He is instructed to repeat the words or numbers he hears. He is then told to close the left ear with his hand and the examiner pronounces disconnected numbers (as 247, 819), words, or short sentences in a conversational voice.

The other ear should then be tested. If the child does not hear what is said the examiner should move nearer—to 15, 10, or 5 feet, if need be—and repeat the test. If most of the children hear readily at 20 feet, that distance may be used as a denominator and the distance at which the voice is heard distinctly by the individual will serve as the numerator of a fraction which represents roughly the hearing acuity of the child.

A child who cannot hear with either ear the watch or voice at more than one-third the usual distance may be in need of special training in lip reading. However, every child who is defective in either ear should have an examination by a specialist to determine whether his hearing can be improved, or prevented from growing worse.

It may be well to remember that a few children have an acuity of hearing above the average.

#### NOSE

Every child ought to be able, *except when afflicted with a cold or hay fever*, to breathe freely through his nose, and his ability to do so can easily be tested by having him shut his mouth and breathe, or the patency of each nasal passage can be tested by pressing on one side of his nose and then asking him to breathe with his mouth shut. The teacher will save time and words by showing by example what she wishes him to do. Some children with normal noses breathe through their mouths, so that mouth-breathing is not necessarily a sign of nasal obstruction.

The teacher has the advantage in such examination over other examiners in that she can make sure as to whether the child is free from a cold at the time of examination.



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**TEETH**

Every child should have the advantage of early and periodic examination of the teeth by a dentist, for dental decay is extremely common and it is only the dentist or oral hygienist that can detect the beginning of this condition when it is most easily and effectively treated. However, such dental service is not yet available for a great many children. Where it is supplied, the teacher should make sure that the service is being used and she can be more certain by an occasional look at the teeth.

The teeth do not always appear on schedule, but at entrance to school the "temporary" teeth (often much decayed) are in place. Usually the first teeth of the "permanent" set appear at this time just behind the molars of the early set. At about the age of 7, the first set begin to be replaced by the second set, and by the thirteenth year the change is usually complete.

In examining the teeth they should be observed with the jaws closed and lips drawn apart and then with the mouth widely opened and head thrown back. Inflamed or ulcerated gums, carious teeth, uncleanliness of teeth should be noted and also irregularities or deformities of the teeth or jaws.

**THROAT**

A thick speech or a history of frequent sore throat or of rheumatic fever would suggest that the throat may need to be examined by a physician.

**THE BREATH**

A distinguished physiologist says that "bad breath has caused more misery than all the bad laws ever enacted." The teacher who finds that a pupil has from day to day a breath of foul odor should do what she can in a tactful way to see that the cause, whether in the mouth, nose, or alimentary organs, is found and removed.

**THE NECK**

*Wry neck*, or a condition in which the head is drawn toward one side and the face turned toward the other, is not uncommon and can be helped by surgical means.

*Enlarged lymph glands* constitute the most frequent abnormality in the region of the neck. Decayed teeth and diseased tonsils are often accompanied by such enlargement, which disappears to a large extent with the treatment of those conditions. These glands may enlarge and become visible as lumps on the side of the neck, along the edge of the band-like muscle which, on either side, descends obliquely from just behind the ear. Glands which appear to the eye as small lumps are found to be much enlarged when examined by touch. A child with such glands should receive a thorough medical examination. An acute attack of swollen and tender glands demands immediate attention.

*Goiter*.—Another gland (having entirely different function) which may become abnormally large is the thyroid, an organ consisting of two lobes about 2 inches long lying on either side of the windpipe at the base of the



neck and connected by a narrow cross band. Enlargement of one or both lobes is known as a goiter.

Simple goiters are common in some sections of the country, probably because of a deficiency of iodine in water or food. They should be brought to the attention of the school physician.

#### THE CHEST

Serious deformities of the chest will be readily recognized, though as a rule, little can be done for them.

The teacher cannot be expected to make an examination of the lungs, but she can note whether the child can take a deep breath and whether the chest expands equally on both sides. She can note also the presence of chronic cough.

She should observe the fact if the breathing is abnormally fast, especially on slight exertion as when walking upstairs. The child may be weak from a recent illness, but otherwise, there may be something wrong with the organs of respiration or of circulation.

#### THE BACK

By heredity there is much variety in the degree of natural curves of the spine as seen from the side, but the teacher will easily recognize any marked deformities. Whether or not these can be cured or improved one can make sure that the child's seat and desk are as comfortable as possible.

Serious lateral curvature can be detected by looking at the child from behind when he stands with feet together and both knees straight and noting whether one shoulder or one hip is higher than the other or whether one shoulder blade stands out more than the other.

#### UPPER EXTREMITIES

Injuries or deformities of the arms or hands are often neglected and the teacher should not overlook these conditions. Cold hands may indicate poor circulation or poor nutrition.

#### THE LEGS

On first observation the presence of a limp or of evident deformity should be noticed. A shortening of one leg to a slight or large degree, due to infantile paralysis or other cause, is often present. The teacher should make sure that everything possible has been done for such cases, either in the way of treatment or in securing proper supports for the shorter leg and proper changes in these supports as the child grows.

#### THE FEET

Deformities of the feet should be treated.

A great deal of good has been done in some schools by an inspection of the feet and of the shoes and stockings of the pupils. The unsuitability of both the size and material of stockings and the size and shape of shoes should be brought to the attention of the pupil or parents. This is particularly important in schools for vocational training, though the need for prevention of "foot trouble" is universal.



## SUMMARY OF IMPORTANT POINTS FOR OBSERVATION 11

**CLOTHING**

Besides the shoes and stockings, the clothing is of interest to the teacher, and she may be a power for good in securing neatness and cleanliness. In some cases the clothing may be inadequate.

Among the younger children the teacher should see to it that they are not overclothed in school and that they do not wear overshoes in the schoolroom, though overshoes when worn out of doors may help to prevent colds and sore throats.

**SPEECH DEFECTS AND OTHER ABNORMAL NERVOUS CONDITIONS**

Speech defects, involuntary movements, nail biting, tantrums, and other such disturbances will hardly escape the notice of the interested teacher, but they are too often passed over as something for which there is no remedy. General restlessness is not a normal state though the cause may not be evident to the teacher. Frequent requests to leave the room should make her suspicious of some abnormal condition. Each one of such cases should be studied or referred to someone who may know more on the subject.

In the routine of school work there may be certain exercises which are more harmful than useful for pupils with speech defects and from which they should be excused, while with special sympathetic care by the regular teacher such pupils may be helped, even when the condition cannot be fully overcome.

**SUMMARY OF IMPORTANT POINTS FOR OBSERVATION****General**

- General impression of physique (age, race, and heredity taken into consideration.)
- Vigor or weakness.
- Alertness or listlessness.
- Good or bad color.
- Cleanliness or uncleanness.

**Face and lips**

- Cleanliness.
- Pallor.
- Blueness or pallor of lips.
- Flush of fever.
- Signs of skin disease.

**Hair and scalp**

- Cleanliness and neatness.
- Signs of vermin or other disease.

**Eyes and vision**

- Strabismus or squint.
- Frequent errors in reading words or numbers.
- Complaints of headache, pain, blurred vision, dizziness.
- Holding book too near or too far.
- Evidence of difficulty in seeing at a distance.
- Congested or watery eyes.
- Styes.
- Red or crusted lids.
- Test with Snellen letters or letter E chart.