CDC

THE COMMUNICABLE DISEASE CENTER

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Public Health Service

CDC
CENTERS FOR DISEASE CONTROL

INFORMATION CENTER

DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
Atlanta, Georgia 30333

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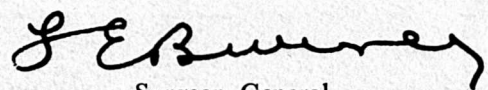
COMMUNICABLE DISEASE CENTER
ATLANTA, GEORGIA

FOREWORD

Communicable diseases are responsible for more than a hundred thousand deaths each year in the United States.

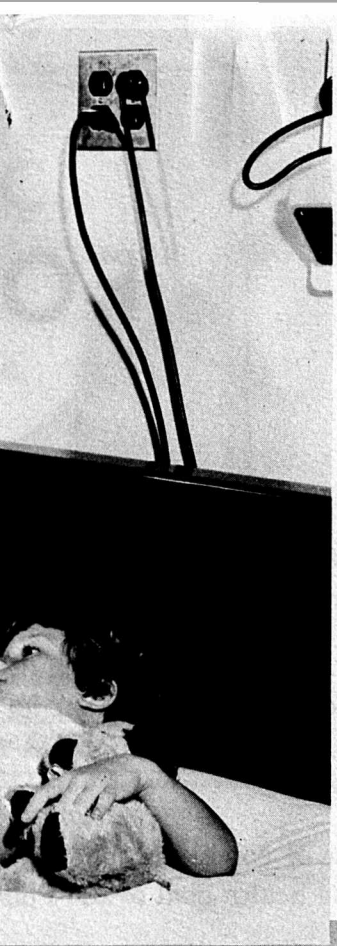
They bring pain and suffering to countless others, they severely disrupt family life, they cause school children to be absent for a hundred million school days a year, and they result in an annual industrial loss equal to two billion dollars worth of American productivity.

Thus the conquest of communicable disease is — and must be for some time to come — a major public health goal of the Public Health Service.



Surgeon General

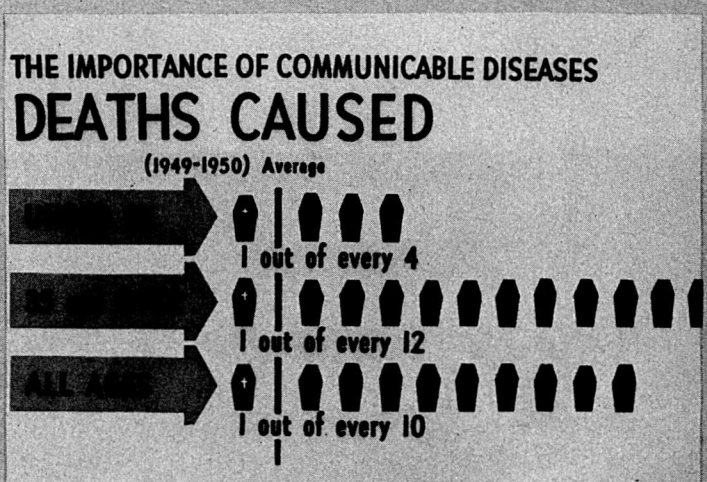
Infectious hepatitis (commonly known as yellow jaundice) is the most rapidly increasing reportable disease in the country today. Much needs to be learned about this disease before adequate treatment and preventive and control measures can be established.



The PROBLEM...

Communicable diseases are still a major public health problem despite the fact that many of the great epidemic diseases such as yellow fever, epidemic typhus, and cholera have disappeared from this country.

Communicable diseases in the United States cause about 150,000 deaths annual-



ly — more than are caused by all accidents combined. These deaths occur most frequently among children and young adults in their formative and productive years. Many deaths that occur after 35 years of age have as an underlying cause a chronic condition resulting from a communicable disease contracted in childhood or youth.

Much of this tragic loss is preventable.

Control measures are available for a number of communicable diseases such as rabies, whooping cough, diphtheria, and poliomyelitis. However, wider application of well-known control measures is necessary before adequate control can be achieved.

For another group, ranging from diarrheal diseases and the common cold to leprosy, practical preventive measures and adequate treatment are still unknown. Additional study and investigation must be concentrated on these problems if solutions are to be found.

Dreaded diseases of the past such as smallpox, typhoid, and malaria have been practically eradicated from this country. The population, for years free of these diseases, no longer has naturally developed immunity. For this reason, constant watchfulness must be maintained to control new foci of infection in our own country, and to prevent importation of these diseases from abroad.

GROUPS OF DISEASES WHICH CDC IS STUDYING INCLUDE:

POLIOMYELITIS,

encephalitis, and other virus diseases of frequent occurrence.

DYSENTERY

and other diarrheal diseases

RABIES,

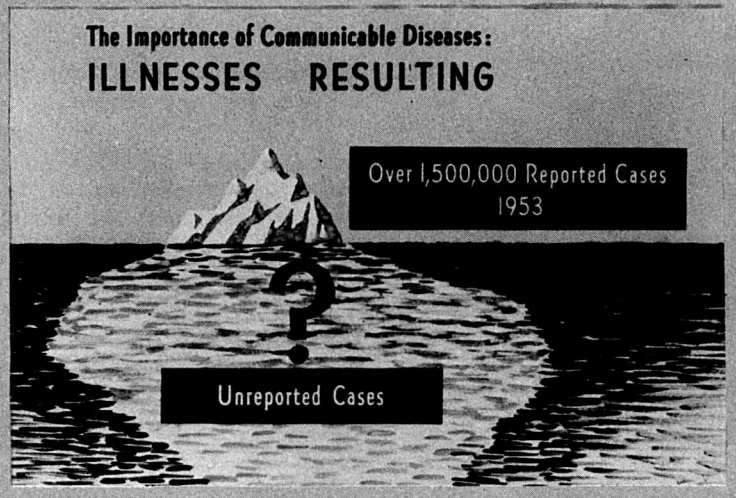
leptospirosis, and other animal-borne diseases.

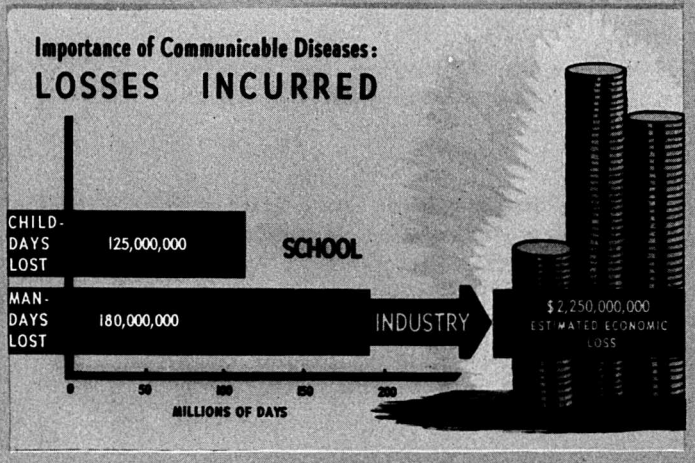
PLAGUE,

typhus, and other rodent-borne diseases.

AMEBIASIS.

schistosomiasis, and other parasitic diseases.





BREAKING the

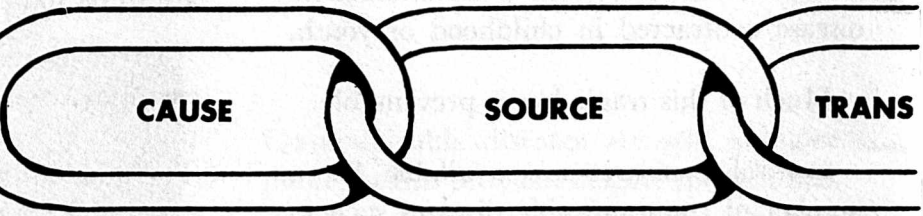
. . . . AT THE SOURCE

YELLOW FEVER — by destroying the infective mosquitoes with insecticides

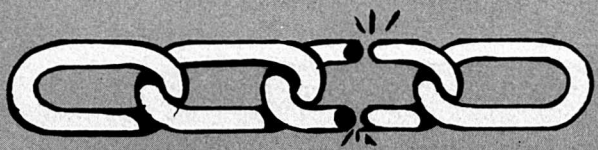
TYPHOID FEVER — by providing safe food and water, and good sanitary facilities

TAPEWORM INFECTION — by advocating proper cooking of beef and pork.

CHAIN of INFEC



. . . . IN TRANSMISSION

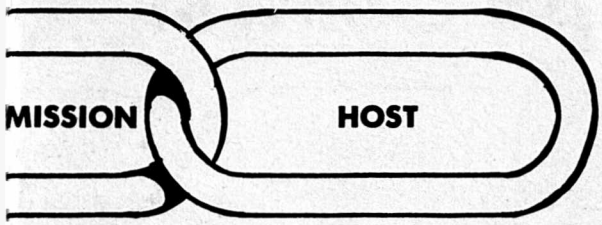


RABIES — by inoculation and controlling the dog population

ROCKY MOUNTAIN SPOTTED FEVER — by educating individuals to avoid tick-infested areas, to remove ticks, and use insect repellants

MEASLES — by isolating patients, and by modifying or preventing infection through use of gamma globulin

TION....



. . . . AT THE HOST

SMALLPOX — by vaccinating to eliminate or decrease human susceptibility

DIPHTHERIA — by inoculating with toxoid to provide active immunization

WHOOPING COUGH — by immunizing all susceptible pre-school children

For every communicable disease there is a chain of transmission. When man achieves enough knowledge to break this chain, a disease can be controlled.

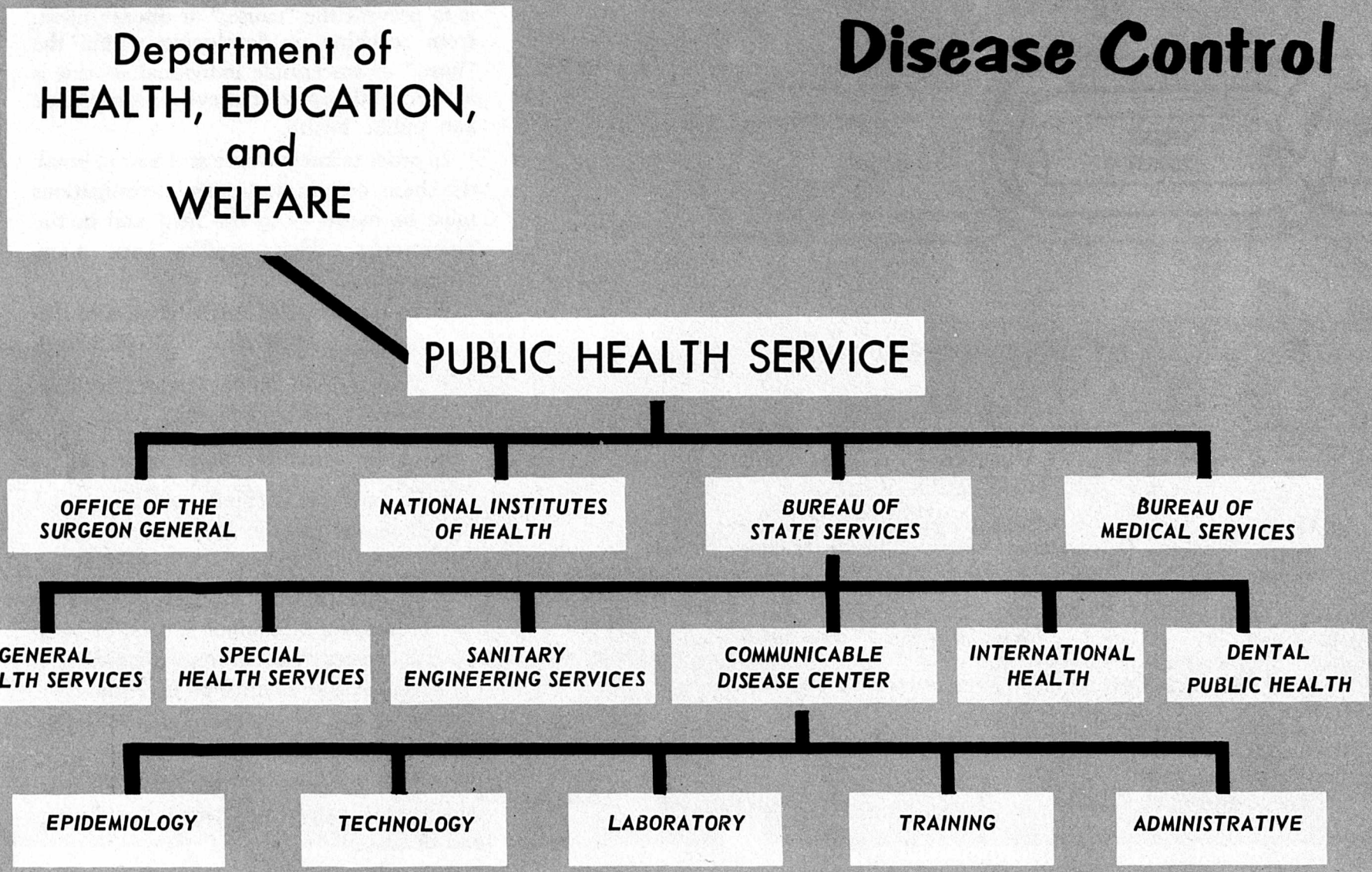
To break this chain at its weakest link is to prevent the "cause," or disease agent, from reaching or developing within the "host," or susceptible individual — this is a basic philosophy of preventive medicine and public health.

In order to know where and how to break the chain, certain studies and investigations must be made — in the field and in the laboratories. These studies have many purposes:

- To discover the characteristics of disease agents and their mode of spread.
- To determine the life cycles of various internal parasites of man.
- To develop new vaccines.
- To improve methods of differential diagnosis for the lesser known communicable diseases.
- To establish more effective ways of preventing contaminated food or body discharges from transmitting disease organisms to uninfected individuals.

Such studies, by physicians and scientists over the past 50 years, have made possible the control of many communicable diseases which once caused wide-spread suffering and death.

Federal Organization for Communicable Disease Control



THE CDC

The Communicable Disease Center is headquartered in Atlanta, Georgia. One of the major field centers of the Public Health Service, it is a nation-wide resource in the battle against infectious diseases. It serves as a center of specialized knowledge and competence in this field, in which its many services are available to state and local health agencies.

Actually, the Center's origin can be traced back to 1942 when an organization called Malaria Control in War Areas (MCWA) was formed to control malaria around defense plants, armed forces installations, and other similar areas in the southeast. As this organization came of age, the potentialities for transforming MCWA into an organization to carry out a broad program of communicable disease control became evident. Thus, with the end of World War II, MCWA was disbanded and the Communicable Disease Center was formed.

To aid State and local health departments in their efforts to control communicable diseases, a corps of specialists has been assembled at the Center — physicians, nurses, veterinarians, engineers, scientists, laboratory workers, and training officers. These specialists are available for assignments to mobile teams which can be sent to any part of the country where their particular skills and abilities are needed. Specialized technical equipment is on call for their use. Thus any section of the nation can get prompt help in preventing and controlling communicable disease.

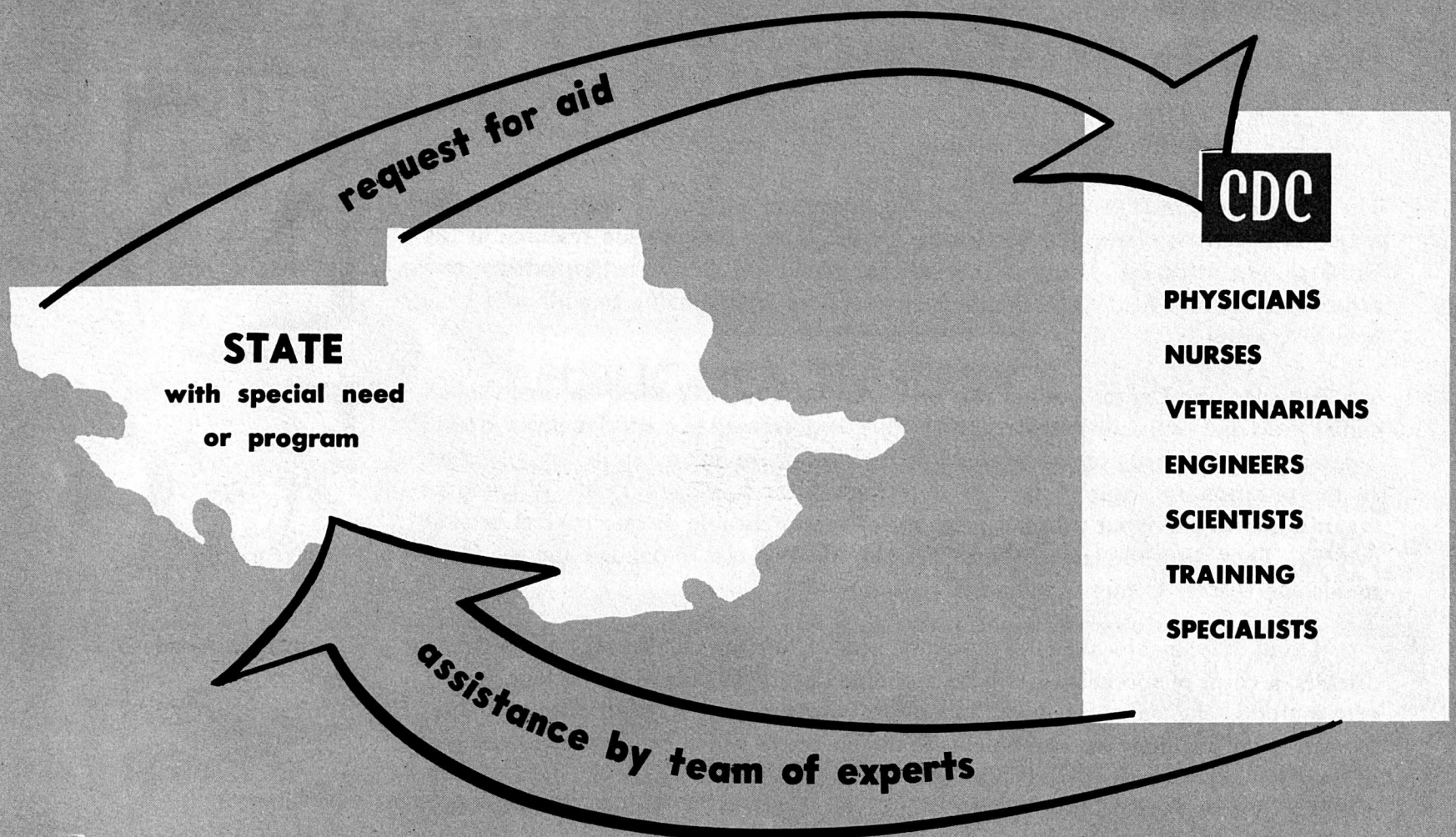
EPIDEMIOLOGIST

TECHNOLOGIST

LABORATORY SCIENTIST

TRAINING SPECIALIST

The CDC PATTERN



# of ACTIVITY....

All CDC programs originate from a special need or problem in the States, often beyond the resources of a single State to identify or control.

Sometimes, the first indication of a disease problem may appear in laboratories during routine examination of specimens—in the discovery of rare or especially virulent disease organisms, for example. Other new or exceptionally challenging problems may be discovered in the process of field investigations.

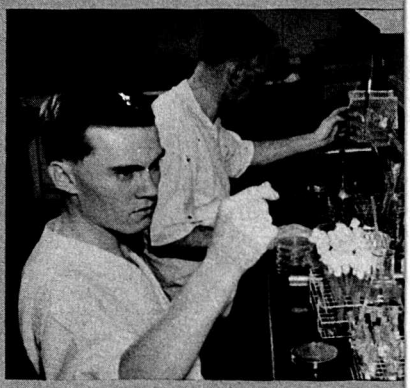
Whether a single epidemiologist, a field technologist, or a laboratory scientist first uncovers a problem, sooner or later a whole team of specialists may be involved.

1

EPIDEMIC AND DISASTER AID

2

STUDIES



3

CONSULTATION

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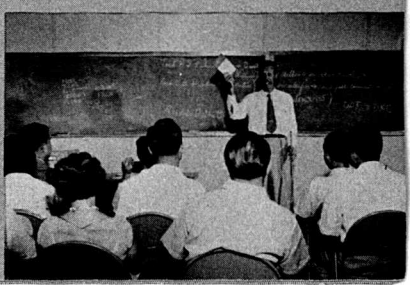


1·EPIDEMIC

Disease or disaster anywhere in the United States or its territories — an epidemic in Idaho, or a flash flood in Texas — is the alarm that arouses CDC to action. At the request of any State health officer needing assistance, the Center dispatches a team of epidemic or disaster aid specialists to the scene of the emergency. Each team is tailored to fit a particular need.

For example, if information reported to CDC suggests an outbreak of leptospirosis, the source of which may be infected ani-

and DISASTER AID...

mals, a veterinarian will be added to the investigative team. If the need is for purification of a city's water supply contaminated by flood, purification equipment and technicians are rushed to the flood area. Or, if insect control is required to prevent disease transmission in a devastated area, chemicals, sprayers, and appropriate specialists are dispatched.

Although staff from any part of the Public Health Service may be assigned to emergency duties, it is CDC's Epidemic Intelligence Service personnel who are most often called upon to man epidemic assistance teams. Physicians, nurses, veterinarians, engineers, scientists, and statisticians, stationed at 18 key points throughout the United States are instantly available for emergency service.

A CDC epidemic aid team, called in during an outbreak of suspected psittacosis in a Kansas schoolroom, collected blood samples from the children in an attempt to identify the infecting organism.

CDC water treatment equipment and disaster aid personnel were rushed to Texas when one city's water supply was flooded.

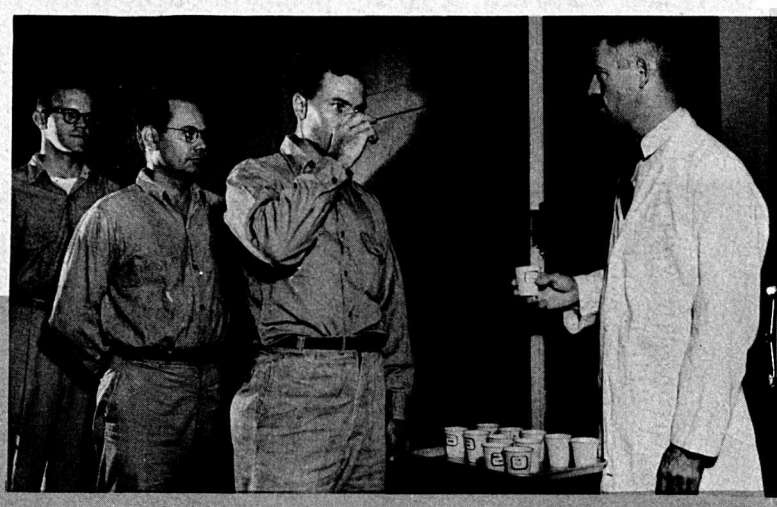
2·STU

During diphtheria epidemics the CDC epidemiologist frequently conducts school surveys for new cases or unrecognized carriers.

DIES....

Emergency aid and other types of investigations frequently uncover situations calling for special studies in the field and laboratory on communicable disease problems. These studies are frequently carried out in conjunction with state health departments in order to solve problems of current importance to States. Typical of these are:

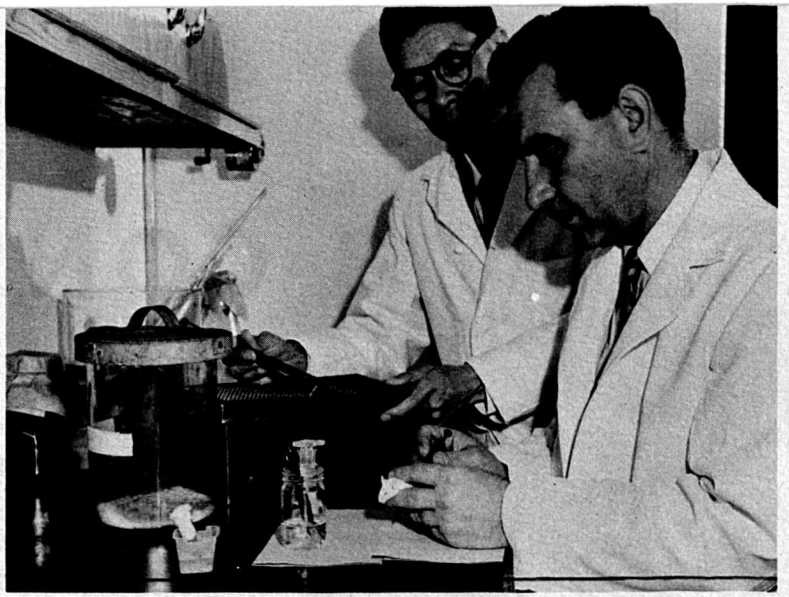
- means of spread and methods of control for poliomyelitis, encephalitis, and the diarrheal diseases



During studies to determine the possible toxicity of DDT residues in foods, volunteers have taken for several months without detectable injury over 100 times the amount a person might inadvertently consume.

- suppression of rabies, leptospirosis, and other animal-borne diseases
- resistance of insects to DDT and other insecticides
- development of techniques for the evaluation and safe use of poisonous chemical compounds being marketed as commercial sprays for insects
- identification of some of the public health aspects of civil defense

Rabies investigations at the Center have shown the mouse inoculation test to be the most accurate laboratory method to date for diagnosing rabies.



An advance in the fight against polio was the discovery by CDC scientists that the Brunhilde type of polio virus can be grown in mice.

To develop safe practices for spraymen, farmers spraying their crops are studied to determine the dermal and respiratory exposure they would receive if they were to neglect the use of protective clothing and proper spray equipment.

3 · CONSULTATION....

Information obtained through studies and investigations is made available to public health workers in this country and abroad. Upon request, CDC's qualified personnel work with health agencies as consultants, and advise on specific public health problems as they are presented.

In cooperation with the World Health Organization, an International Shigella Center has been established at CDC. This activity which deals with a group of bacteria causing bacillary dysentery, furnishes diagnostic serums, standard cultures, and reference diagnostic facilities to health agencies in all parts of the world.

In addition, consultative teams are avail-

CDC training specialists visit the States to consult with public health personnel on their training problems.

Visiting insect control technologists from CDC confer with State health personnel on their salt marsh mosquito problem.

able, upon request, to review the technical and administrative aspects of public health laboratory programs anywhere in the United States. Specialists in insect and rodent control at CDC give advice and assistance on such problems as baiting and trapping rats, dusting with DDT, and controlling mosquitoes in irrigated areas.

State health officials may call upon CDC for assistance or recommendations in setting up courses for their own training officers, or for advice on the production and utilization of audio-visual training aids.

Through its reference diagnostic service, CDC aids physicians and public health laboratory directors who send specimens for identification of unusual disease organisms or for confirmation of tentative diagnoses.

Epidemiologists at the Center are constantly available for consultation on specific disease outbreaks or any other phase of "disease detecting."

Consultation with physicians and scientists in CDC laboratories who are authorities in their fields is often helpful to State health personnel.

4·DEMONSTRATION....

To improve community health, the knowledge gained through the investigations of CDC and other agencies must be put into practice by State and local health departments.

In cooperation with these departments, CDC conducts demonstrations to acquaint public health personnel with new concepts and techniques being developed and field-tested at the Center.

A current example is the Community Vector Control Demonstrations. These are being conducted in certain cities that have a high incidence of insect-borne disease or unusual insect and rodent problems. CDC works with each municipality for a two-year period in an attempt to solve these

BETTER REFUSE HANDLING

ELIMINATION OF PRIVIES

problems by making permanent improvements in the city's sanitation programs. Better methods of refuse handling, elimination of privies and animal pens, and other improvements are augmented by use of insecticides and rodenticides. Thereafter, at the close of the demonstration, the city continues the program on its own, while CDC withdraws to begin other demonstrations elsewhere.

INCREASED CITIZEN PARTICIPATION

5 · TRAINING....

One of the basic objectives of the Center's training activities is to assist the States in the development and improvement of their own public health training activities. This is accomplished by training consultation, provision of training aids, specialty lectures, conduct of model training demonstrations within the State, or a combination of these services.

CDC provides training courses and services to States upon request. Courses are provided in epidemiology; laboratory diagnosis; vector control; records keeping and statistics; the control of communicable disease related to the environment; epidemic and disaster aid; public health in civil defense; training methods; and public health orientation and administration. The Center also provides training assistance and services to other segments of the Public Health Service, and to other Federal and State agencies engaged in activities related to public health.

Special training in the laboratory diagnosis of rabies is provided for the laboratory technicians of public health departments planning to conduct rabies control programs.

Two basic types of training are offered. The first takes the form of pre-employment courses in which the training officer, in cooperation with schools of public health, attempts to bridge the gap between academic training and actual field practice. The second type is refresher training by which health workers are brought up to date on the latest techniques in their particular fields.

Courses are offered at CDC headquarters in Atlanta, Georgia, and Field Training Stations strategically located throughout the country. Other courses, decentralized to States, are available by special arrangement.

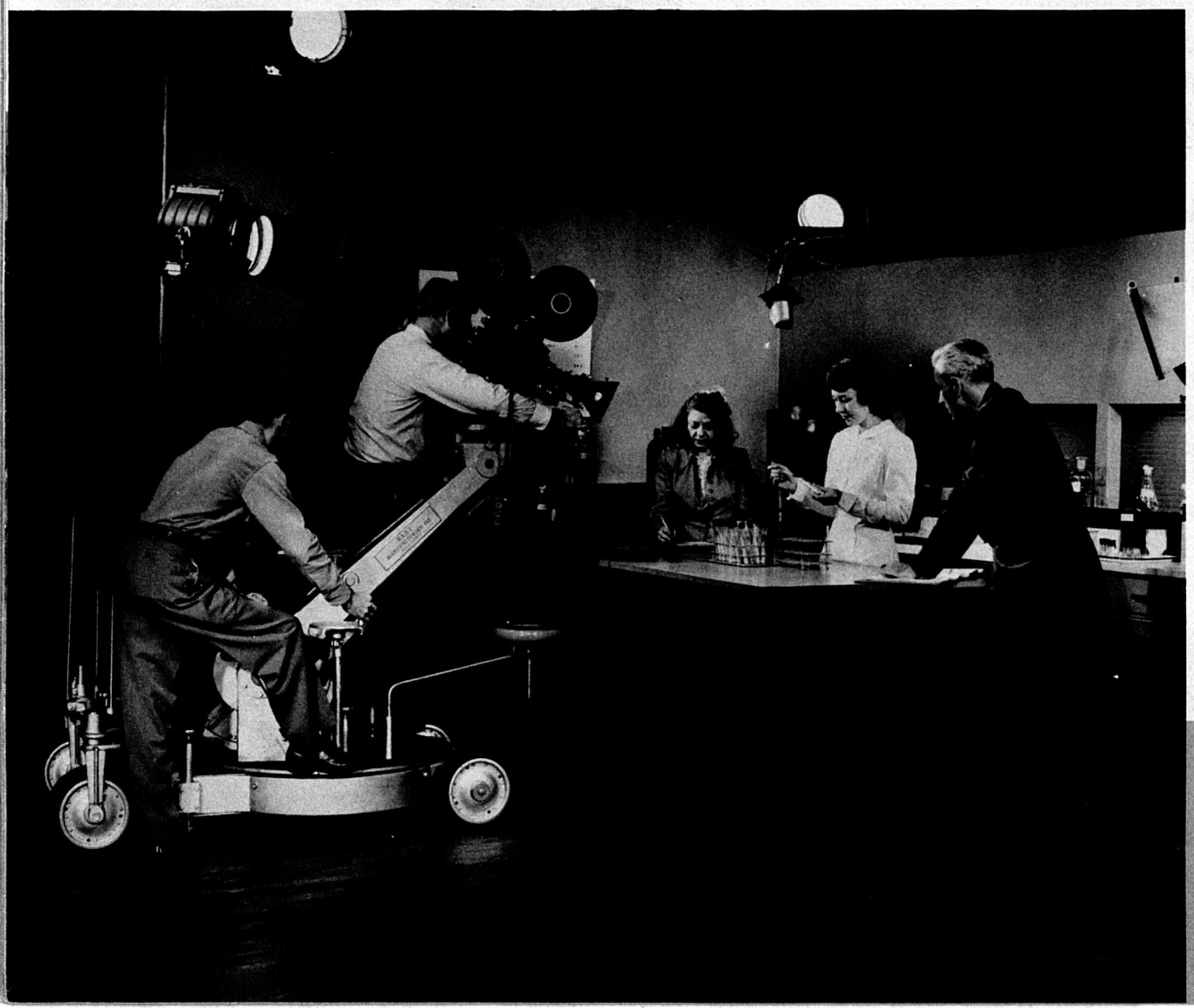
Participants in training activities come from all over the United States — from many State and local health departments, Federal agencies, and private institutions — and from foreign countries as well.

Rodent control courses provide instruction in rat-bleeding techniques used in typhus detection.

The Epidemic Intelligence Service courses at the Center train specialists in the practical application of field epidemiology.

Housing hygiene courses train participants to observe and report deterioration according to the American Public Health Association Housing Appraisal Method.

- motion pictures
- slides
- exhibits
- charts
- technical reports
- informational memoranda
- bulletins
- orientation material
- training guides
- film strips



CDC audiovisual production team making a motion picture.

TRAINING AIDS....

CDC makes use of reports, summaries, handbooks, scientific papers, conferences and lectures, in addition to training courses, in putting new developments of scientific interest to practical use. These materials are developed by the Center's staff from scientific knowledge obtained through the many studies and investigations conducted by CDC. By these and all other available means the Center seeks to transmit new developments of scientific interest to public health personnel, staffs of universities, private practitioners in medical and related fields, and others, both here and abroad.

Audiovisual aids in the form of training films, filmstrips, and slide sets are produced for use in State and local health departments, medical schools, and schools of public health. Other training aids consist of exhibits, flip charts, posters, and still pictures. These aids are prepared at the Center headquarters in Atlanta by a trained staff, working closely with professional personnel to assure the highest quality of material possible.

The greatest possible use is made of printed materials and audiovisual aids in the Center's training program. Audiovisual aids permit a more graphic and interesting presentation of the latest scientific findings to the student, and, in addition, they also help to speed the presentation of the material to be covered.

The center also cooperates with State and local health departments, upon request, in adapting CDC training aids for use on television.

CDC STRIVES TOWARD the GOAL:

Through field study and laboratory investigation of communicable diseases and their control, CDC helps to reduce the sum of human suffering, economic loss, and death. By means of its demonstration, consultation, and training services the Center disseminates specialized knowledge to State and local, Federal and foreign public health personnel. In this way, beneficial new knowledge becomes part of local public health practice. Through production and distribution of educational and informational materials and training aids, the Center helps to implement and vitalize public health programs. And by means of epidemic and disaster aid programs, CDC extends a skilled and helping hand to overtaxed public health personnel who request assistance.

Working with other public health agencies—local, State and Federal—the Communicable Disease Center strives to eliminate communicable disease as a public health problem. The war against these diseases is far from won. However, if the current downward trend of deaths from these infectious diseases is continued, the goal should be in sight by the year 2000. Achievement of this aim is dependent upon unremitting State and Federal teamwork in public health programs for communicable disease control, backed by adequate investigations and development. The CDC is proud of its contribution toward this goal.

STUDIES

DEMONSTRATION

TRAINING

CONSULTATION

EPIDEMIC AND DISASTER AID

FREEDOM from COMMUNICABLE DISEASE

A NEW HOME for CDC

New headquarters facilities for the Communicable Disease Center are now under construction. The site is a 14-acre plot of land donated by and adjacent to Emory University in suburban Atlanta.

Six separate buildings, grouped together and interconnected, will house investigative, laboratory, and training activities; audiovisual production facilities; and administrative services.

Construction of such a center will allow the CDC, for the first time, to assemble its headquarters activities at one location, thereby concentrating its forces more effectively for the conquest of communicable diseases.