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Role of the Dentist in Oral Cancer Detection

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The dentist has an important role in the control of cancer. He has an opportunity to detect early malignant processes in the oral cavity and on the face because many people in this country have been educated to the fact that they should see their dentists at regular intervals. The dentist should assume a definite responsibility in the detection of cancer in the oral cavity and about the head and neck. The patients the dentist observes usually have no medical complaints. Early malignant lesions are relatively asymptomatic, and the person who has an early lesion probably is not aware of its importance. The alert dentist may aid the patient by recognizing the early malignant lesion. The physician, on the other hand, usually has the opportunity to see people only when they have a definite complaint and when they report to him for specific treatment. It appears that the dentist has a better opportunity to scan the apparently well population than does the physician.

Prevalence

Statistics of the Memorial Hospital for treatment of cancer and allied diseases in New York City show that 60 percent of the patients with cancer of the gums had consulted a dentist first (*1*). The dentists who were consulted did not recognize these malignant lesions in a large percentage of cases. In a total of 157 cases of carcinoma of the oral cavity, 38 percent were recognized by dentists as probably being carcinoma. On the average it took 3½ weeks for the patient to be referred by a dentist to a physician. The remaining 62 percent of these cancer cases were probably not recognized by the dentist, and it took an average of 8 months for these cases to obtain diagnostic service. The physician also may fail to detect the presence of neoplastic processes. A group reported that 5 to 10 percent of oral cancer patients referred to their clinic could be considered early cases despite the fact that in a large majority of instances the patient probably sought medical advice at some earlier stage in the disease (*2*).

Neoplasms in other parts of the body are often difficult to detect in the early stages because they are not easy to see. On the other hand the lips and oral cavity lend themselves well to visual examination. The oral cavity is easily inspected, although small lesions on the base of the tongue or deep in a fissure may be difficult to see.

The dentist or physician should realize that the man who has the first opportunity to suspect a malignant growth has the golden opportunity to save the patient's life (*1*). It is his responsibility to see that the patient is placed in competent hands for treatment. If cancers of the head and neck are treated when the lesions are less than 2 cm, 55 percent can be cured. If both early and late cases are included, the percentage of survival is only 32 percent. In late cases the percentage of cure is much smaller.

The death rate from cancer in the United States is on the increase. In 1940 there were 158,335 deaths attributed to cancer, while in 1945 cancer accounted for 177,464 deaths. Preliminary information for 1946 yields a figure of 181,346 deaths from cancer. On the basis of incidence rates it is estimated that there are about 475,000 to 500,000 persons under treatment for cancer at any given time in the United States. About 300,000 new cancer cases are diagnosed for the first time during each year. In addition to these cases are those which have been treated and cured, as well as those which have not been diagnosed. The number in the latter two categories is unknown.

An estimated 10 percent of all cancers in men and 2 percent of all cancers in women occur in the buccal cavity, which includes the lips. The prevalence rates of cancer indicate that 20,000 persons probably developed cancer of the buccal cavity in 1947 (*3*).

Definition

Malignant neoplasms may be grouped under the term cancer. It is preferable for purposes of this discussion to include all carcinomas and sarcomas under the term cancer.

A neoplasm or cancer is an autonomous new growth of tissue. It arises spontaneously, and it serves no useful purpose. As long as the blood supply and metabolic capacity of its host permit, neoplastic growth continues. It spreads by expansion, infiltration, or by metastasis to other parts of the body. Positive cure is achieved only by complete removal or destruction of the new growth and metastases if present (*4*).

Any ulceration that does not respond to treatment in 2 weeks should be considered a cancer until it is proved otherwise. The same may be said of any growth or swelling that is progressive or shows no tendency to regress after 1 month's duration. There may be many pathological conditions, but the main ones in which a delay in diagnosis is fatal are those which are neoplastic.

Martin states that it can be said without hesitancy that oral cancer is more serious and more important to the patient than any other condition with which it might be confused (*1*). He also states that a dentist or a physician should consider the possibility of cancer first in any suspicious lesion instead of waiting to see what happens. There are chronic conditions such as syphilis and tuberculosis with which cancer may be confused. The treatment of such chronic conditions does not constitute an emergency, but the early diagnosis and treatment of cancer are emergency measures. An innocuous-looking chronic ulcer, if cancerous, may metastasize at any moment, and then it has reached a stage where the chances of cure are markedly reduced. This may occur while the observer is waiting to see what happens.

Etiology

The exact etiology of cancer is obscure; however, chronic irritation can often be demonstrated to have preceded cancer. There are two groups of factors concerned with cellular growth of neoplasms. The intrinsic factors of cellular growth are those within the cell. Properly controlled, they are concerned with normal growth and repair of tissues. Abnormal forces, however, probably contribute to the etiology of neoplastic growth. Heredity may be one of these intrinsic factors. Clinical observation and studies of familial tendencies have shown that certain families of humans and certain strains of animals tend to have a higher incidence of carcinoma, and that they tend to develop a neoplastic lesion at an earlier age than the average for the general population. We, as dentists, cannot alter these intrinsic factors. However, the other group of etiological factors are more controllable. They are the extrinsic or environmental factors of chronic irritation. Chronic irritation results from mechanical, thermal, or chemical trauma, or from actinic rays and rays from radioactive substances.

Mechanical irritation probably influences the development of a lesion on the lip, buccal mucosa, or tongue in the presence of sharp, jagged, protruding teeth or ill-fitting dentures (*5*). Most authorities refer to ill-fitting dentures as one of the causative factors of neoplasms of the buccal cavity, although some men do not agree with this theory. The relation of thermal irritation to neoplastic growth is demonstrated by the frequency with which neoplastic processes develop in burn scars.

Chemical irritation can be shown to initiate neoplastic growth. Coal-tar products are definitely carcinogenic. Laboratory experiments have proved this in animals. Chimneysweeps have a high incidence of carcinoma of the scrotum, and persons who work with tar have a high incidence of carcinoma of the exposed skin (*5*).

Mechanical, thermal, and chemical irritation may result from the use of tobacco. Chronic mechanical irritation results from the constant holding of pipes or cigars in the mouth. Thermal irritation results from the heat of burning tobacco and the hot air being drawn into the mucous membrane. Chemical irritation may result from the coal tar by-products of combustion.

Actinic rays of the sun irritate the exposed parts of the body. The lower lip frequently develops crusting and chronic fissures from exposure to the sun and extremes of weather. Fishermen and sailors have a high incidence of basal cell carcinoma on the skin of the face and squamous cell carcinoma of the lip. The lips can be protected from the actinic rays by applying an ointment.

Roentgen rays and rays from radioactive substances are definitely carcinogenic. Early workers with roentgen rays frequently developed carcinoma of the skin of the hands. The victims of the atom bomb are being observed for evidence of cancer development.

Syphilis may be an influencing factor especially in cancer of the tongue. It is stated that in otherwise healthy men in the 55- to 60-year age group, the general incidence of syphilis is 4 to 6 percent. On the other hand, more than 30 percent of the men in this age group who have cancer of the tongue will be found to have syphilis (*1*). Syphilis causes chronic glossitis which probably is a precancerous lesion.

Avitaminosis, particularly of the B complex type, may cause lesions which develop into cancer. Cheilitis and perleche or fissures at the angles of the mouth occur in riboflavin deficiencies. Leukoplakia often may be connected with vitamin deficiencies. Diffuse atrophy of the papillae of the tongue and chronic inflammation are shown in the beet red tongue of pellagra. Many think that these forms of chronic irritation are definitely carcinogenic.

Two cases can be cited in which irritation may have influenced the course of neoplastic growth.

Case No. 1.—White man, age 56, fell asleep with a lighted cigarette in his mouth. The burned area ulcerated, failed to heal, and within 5 weeks a squamous cell carcinoma, grade II, developed in the ulcer.

Case No. 2.—White man, age 56, had been a heavy pipe smoker all of his life. He had various areas of leukoplakia and had a typical pipe smoker's mouth. One month before admission he fell and jammed the pipe stem against his hard palate. A firm, hard lump with superficial ulceration developed. It was diagnosed as squamous cell carcinoma grade II.

Signs and Symptoms

The general dental practitioner cannot be expected to be fully conversant with the treatment and the clinical course of neoplastic processes. He should, however, be acquainted with certain signs and symptoms which will lead him to suspect the presence of a neoplasm.

The dentist should perform a complete examination of the buccal cavity of every patient. The examination should be systematic and routine. It is suggested that a definite examination procedure be followed. The teeth are of primary importance to the dentist and probably will be examined first. After the teeth, the remaining soft and hard supporting tissues should be carefully examined. The tissues can be reflected with a mouth mirror and easily seen. A suggested procedure is the examination of alveolar ridge, floor of mouth, tongue, hard and soft palate, and tonsillar region. The lips also should be examined. Cancers of the lip are important because they are the most frequent of all buccal cancers, and they are the most easily cured. Finger cots should be available for use in the examination. If any suspicious lesions are found, a palpation with a finger will help to determine the invasive tendency of the lesion by feeling the amount of swelling or induration present.

Examination of other external tissues of the head and neck are outside the realm of the dentist. However, a dentist might detect lesions with definite malignant characteristics on the skin of the head and neck. While talking with the patient, he will note the patient's voice. Any hoarseness that has been present for a month or more may be due to cancer of the vocal cords. The dentist will do the patient a great service if he will become acquainted with the general manifestations or symptoms of cancer of the head and neck and especially of the oral cavity.

Early cancer of the oral cavity will manifest itself as a small nodule or ulcer. It may be painless, under 3 mm. in diameter, and the patient may not be aware of its existence. Leukoplakia may begin to thicken, to ulcerate, or to form fissures (*6*). The bases of the new lesions have a hard button-like feel, and they tend to infiltrate into the surrounding tissue. They are indurated. If these changes are discovered at this stage, the chances of cure are very good. If such a nodule grows larger (approximately 1 cm.), and the blood supply is reduced, it may ulcerate. The surface of the ulcer is coarsely granular, and it bleeds readily when irritated. Nelson points out that the bleeding is arterial or bright red while the bleeding from inflammatory processes, which are passively congested, is venous or dark in color (*7*).

As the lesion becomes larger and more ulcerated, secondary infection occurs. The lesion becomes fissured, excavated, and necrotic. A characteristic odor accompanies the necrosis, and the lesion becomes painful. The infiltration or induration increases, the mass has a hard feel, and the extent of the growth can be determined approximately by the extent of the induration (*1*). If metastases have occurred to the regional lymph nodes, the prognosis is poorer. Carcinomatous tissue is friable because it lacks a connective tissue stroma. It breaks off readily when bits are removed for biopsy.

Another type of neoplastic lesion is the proliferative one. Instead of ulcerating early, this lesion grows outward with a papillary or cauliflower-like growth. The surrounding tissues are not infiltrated as much as in the infiltrative or ulcerative types. The blood supply is maintained, and ulceration does not occur early. The tissues also are friable when cut for biopsy.

Cancer of the Face

The two most frequent forms of cutaneous cancer of the face are basal and squamous cell carcinoma. A typical basal cell carcinoma rarely shows rapid growth, and it has a firm, greyish white, translucent, pearly, rolled edge usually without deep induration. The sharply demarcated rolled edge is quite characteristic. The lesion grows slowly and rarely metastasizes, but it is locally destructive. The central portion of the lesion may be ulcerated or crusted. The edges of an ulcerated lesion may undermine the surrounding skin, and it is then called an indolent or rodent ulcer. Early squamous cell carcinoma is usually bulkier in growth than the basal cell carcinoma. It metastasizes more frequently to regional lymph nodes. A third type of cancer of the skin is the malignant melanoma which some believe may develop from a pigmented mole or nevus. Melanomas are very malignant and metastasize early and widely.

Cancer of the Lip

The lip is the most prevalent site of buccal cancer. Cancer of the lip occurs predominantly in the white male. Forty-seven percent of the oral cancers in the white male occur on the lips, and this comprises 5 percent of all cancers in the male. Eighty-four percent of carcinomas of the lip in whites occur in the male. This type of cancer is many times more prevalent in the white male than in the colored male (*3*). The high incidence and the high cure rate that is possible with early discovery of the lesion on the lip make this site the most important for consideration by the dentist. Memorial Hospital reports a 5-year cure rate of 86 percent in primary lesions less than 2 cm. in size, and a cure rate of 70 percent for all cancers of the lip (*1*).

Carcinomas of the lower lip are almost always the squamous cell type, and carcinomas of the upper lip are usually of the basal cell type.

The typical squamous cell carcinoma of the lower lip arises in the vermillion border. It begins either as a small nodule or papule, and when it grows, it tends to infiltrate the tissue below it, and the surface ulcerates early. This lesion may be confused with herpes or chancre. However, chronicity is the diagnostic feature. A carcinomatous lesion does not regress; therefore, any ulceration of the lip that persists after 2 weeks is carcinoma until proved otherwise (*1*). Basal

cell carcinomas may develop on the cutaneous surface of the upper lip and may involve the vermillion border secondarily. They usually are typical of basal cell carcinomas elsewhere and have been described previously.

Other Cancers of the Mouth

Carcinoma of the tongue is the next most prevalent site of cancer of the buccal cavity. This type comprises 1.8 percent of all cancer, and 18 percent of all cancer of the buccal cavity in white males (*3*). Cancer of the tongue presents a difficult problem. The prognosis is not good. Memorial Hospital gives a 5-year cure rate for "all comers" of 28 percent and for lesions less than 2 cm. in size, of 55 percent (*1*). Most lesions of the tongue are in an advanced stage when they are discovered because they progress rapidly and are painless in the early stages. Because the patient cannot see it, he does not become aware of the lesion's existence until it is advanced. Metastases occur very early probably because of the mobility, extreme vascularity, and rich lymphatic supply of the tongue (*8*). Squamous carcinoma is the most frequent type of cancer of the tongue. It is often associated with an area of leukoplakia or syphilitic glossitis. Tongue cancers frequently ulcerate, infiltrate rapidly, and immobilize the surrounding tissues. The lateral borders of the tongue are most frequently involved, as might be expected, since these regions are subjected to the greatest trauma.

Cancer of the mouth is computed to be 2.1 percent of all cancer and 22 percent of all cancer of the buccal cavity in white males (*3*). Presumably cancer of the alveolar ridge, floor of the mouth, hard and soft palate, and tonsillar region are included in this estimate. The prognosis in all of these is poor. The 5-year cure rate at Memorial Hospital is 46 percent with lesions less than 2 cm. in size, and 25 percent with "all comers," both early and advanced (*1*). One can see, therefore, that the early diagnosis and treatment of lesions of the lip, tongue, and mouth will increase the chance of cure.

A number of malignant tumors may involve the jaws and palate. They may develop in bone, the soft tissues, or in the dental structures and include such tumors as squamous cell carcinoma, adenocarcinoma, adamantinoma, and various types of sarcomas. Squamous cell carcinoma is the most common.

Biopsy

The problem of biopsy is one which will have to be handled with care by the dentist. Of course every suspicious lesion should have a piece taken from it for submission to a competent pathologist for study. A principal deficiency on the part of physicians in the handling of neoplasms is the failure to have samples of suspicious lesions examined histologically. The dentist is restricted to specific sites,

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and he should limit his operations to oral tissues. A biopsy should be performed on all bone cysts, alveolar granulomas, and on any ulcer or swelling of the gingiva which has the characteristics of a neoplasm. A dentist should see that a biopsy is obtained from any ulceration of the floor of the mouth, gingival buccal gutter, tonsils and tonsillar pillars, and hard palate which shows the characteristics of a neoplasm. One should bear in mind that a single negative biopsy does not rule out cancer. It is not unusual to have many negative biopsies before a positive biopsy demonstrates the presence of cancer.

A definite technique must be followed for the procedure of taking a specimen for biopsy. A specimen of tissue may be obtained by cutting with a scalpel or biting with biopsy forceps or rongeurs. The specimen should be obtained with as little trauma as possible. It should be placed immediately in a fixing agent. A 10 percent solution of formalin is usually employed as the fixing agent.

The site from which the specimen is obtained is important. The specimen should be removed from the advancing edges of the neoplasm. It should contain some normal surrounding tissue, the vascular bed of the neoplasm, and some of the more centrally located tissue. It must be remembered that the tissue from the center of the growth may be necrotic, composed of scabs, crusts, or keratinized epithelium so that it will not be adequate material for a biopsy.

Certain clinical data must be submitted with the specimen to the pathologist. A brief history, the duration of the lesion, a description of the location, and gross characteristics are necessary to the pathologist for an accurate report.

In summary, the general characteristics of cancer of the oral cavity are chronicity, tumefaction, induration, and ulceration. Any ulcer or swelling which is present for 2 weeks and which shows no signs of regression is cancer until proved otherwise. The dentist has an important role in the control of cancer. He should make it his duty to detect cancers of the oral cavity and to influence the patient to obtain proper treatment.

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Objectives and Program of the Arkansas Cancer Detection Project

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Philosophy and Objectives

A cancer detection project was inaugurated at the Public Health Service Medical Center in Hot Springs National Park, Arkansas, on November 1, 1947. This activity is a part of the program of the Field Operations Unit, Cancer Control Branch, National Cancer Institute, and follows the recommendation of the National Advisory Cancer Council which states:

> (10) That the National Cancer Institute give aid in providing the physical facilities, scientific equipment, and, if necessary, the training of personnel in a few cancer centers strategically located from a geographical point of view and associated with one or more medical centers. * * * From the experience gained in these several demonstration centers, it should be possible to develop a plan applicable to the whole country to insure that cancer patients receive the best that medical science has to offer in the way of diagnosis and treatment. The availability of treatment in these centers should not be denied to anyone because of inability to pay (*1*).

The field of cancer control, in its broadest sense, encompasses fundamental and applied research, diagnosis, treatment, case-finding and follow-up, statistical studies, and informational activities. The Arkansas project was undertaken to evaluate one of the newer case-finding devices—the cancer detection center.

Specifically, the objectives of the project may be stated, as follows:

1. **To develop practicable and effective methods of organization and administration of a cancer detection center.**
2. **To develop and evaluate methods of history taking and physical examination best suited to detection centers.**
3. **To demonstrate the potentialities of basic laboratory procedures required in a cancer detection center.**
4. **To demonstrate the effectiveness of the cytologic test for cancer, and its applicability as a mass screening procedure to large numbers of persons.**
5. **To develop a system of follow-up so that individuals discovered to have a major abnormality may be insured of further diagnostic care and eventual treatment.**

Several varying philosophies have been followed in the establishment of detection centers. One is the contention that their main usefulness lies in the education of private physicians, who serve part-

time in order to become familiar with precancerous lesions and early cancer, and to become more adept in the performance of ideally comprehensive physical examinations. This type of examination must obviously be time-consuming.

Another philosophy holds that a detection center should be utilized primarily to provide cancer screening services to examinees, and that a less time-consuming examination should be performed, limited to those sites at which cancer is most likely to be discovered. This philosophy has been justified on the grounds that it makes possible the screening of very large numbers of persons and yields a much greater number of curable lesions than any other approach.

In the Arkansas project, a rather middle ground philosophy has been adopted. The Hot Springs physicians are developing an effective complete physical examination procedure which, while it has educational value, will also be capable of application in other detection centers established for the purpose of providing screening services for large numbers of apparently well persons.

The experience of others has led to the belief that cancer detection centers, while worthwhile from an ideal standpoint, are an expensive undertaking—certainly outside the realm of practicability for the average community. In a discussion of the practicability of these centers, there is a reference (*2*) to the cost, estimated at $7,000–$8,000, of discovering a cancer case in a detection center. It is concluded therefrom that:

> It is true that human life is priceless, and that discovery of a case of cancer in a curable stage is worth any amount of money and effort. But this philosophy can be applied to only one person. If you apply it to everybody you run into the difficulty that time and money are available in only finite amounts and must be allocated to all the other essential things of living (*3*).

Actually the incidence of cancer among the total population is such that when costs are brought down to the irreducible minimum they will still be higher than those necessary for the discovery, for example, of dental caries or heart disease because both of the latter conditions are considerably more common. If we examine the incidence rate of cancer, which is estimated at 200 per 100,000 population (*4*), it is apparent that only 1 in 500 persons of all ages, or 0.2 percent, will develop cancer within the ensuing year. If the cost of examining the whole 500 must be allocated to the single case discovered, the result is bound to be a staggering figure. Even though detection centers show an incidence rate of 1½ to 2 percent (*5*) (probably because of the presence of various selection factors, such as age), a study of 10 detection centers in New York City for the first 3 months of 1947 revealed a cost of $6,486 per case (*6*).

While the relatively low incidence rates are in part responsible for high costs, another factor which further increases costs is the limited service most centers provide. There are only a handful of full-time

centers operating 5 days a week, 8 hours a day. Most of them operate on a part-time basis holding sessions once or twice a week or, in many instances, 1 or 2 hours a month. Obviously, if equipment is purchased to establish the center and it is utilized only a small portion of the time, the cost of operation will be high. A by-product of part-time service is the relatively small numbers of examinees seen, a factor which raises the cost per examination.

Since it is desirable to utilize well trained physicians and laboratory workers, the personnel costs on a part-time or hourly basis are inevitably higher than they would be with the use of a full-time staff. Although complete information is still lacking, it has been reported that the current cost per case discovered has been reduced in some detection centers to approximately $1,800–$2,000. This is probably due in large measure to the expansion of service to approach a full-time operation. Although this figure may be further reduced in the future, it is clear that early cancer detection even at this cost is far less expensive than permitting the case to go undiagnosed until the patient becomes a candidate for extremely costly advanced cancer care.

Through the Hot Springs project it is planned to demonstrate if excessive costs can be prevented when certain basic principles are applied. First, the pilot detection center operates on a full-time basis. Second, it has been established in conjunction with an existing hospital facility, thereby making it unnecessary to purchase the full range of equipment needed in most detection centers, such as X-ray apparatus and centrifuges. Third, through the existent hospital facility, we are able to draw upon full-time medical, nursing, laboratory and auxiliary personnel.

Efforts are being made to develop a clinical examination procedure which is both relatively complete and adaptable for use in centers examining large numbers of patients. To achieve this, we are attempting to evaluate the epidemiologic or "statistical" approach to clinical examinations. The recently published study by White and Geschickter (7) emphasizes the importance of concentrating on those sites where pathology most frequently occurs which should go a long way toward solving the problem of the 6 to 12 months backlog of many detection centers. The culpability of physicians and patients in delaying diagnosis and treatment has been the subject of much study and rightly so. But there is an equal need for an analysis of the factors causing the large backlogs in detection centers, which are also responsible for delayed diagnosis and treatment. The patient who has to wait 6 to 12 months before being examined in the detection center is in just as precarious a position as one who procrastinates out of ignorance or one not properly advised. In some areas patients are advised to report to their family physician when the backlog is so

large that they cannot be seen before a period of 2 months. In the Hot Springs project it is hoped sufficient administrative experience will be gained in the operation of a detection center to determine how this type of delay can be eliminated.

Another by-product anticipated from the Arkansas project is a comprehensive study of the relationship between the incidence of cancer and that of the venereal diseases, particularly syphilis and lymphogranuloma venereum.

One of the most important aspects of the Hot Springs project is the development of a pre-treatment follow-up mechanism through which is accomplished the desirable sequence of events from early discovery to final treatment. A trained public health nurse with basic orientation in cancer has been assigned to the staff for the primary purpose of assisting in this follow-up work.

It is planned, in addition, to evaluate carefully the cytologic test for cancer as a screening device, and to develop a training program by means of which the kinds of personnel and type of training necessary to establish cytology services will be determined.

Program

As many public health workers know, the Hot Springs Medical Center is a venereal disease rapid-treatment center operated by the Venereal Disease Division of the Public Health Service. The case load approximates 15,000 a year or close to 300 patients weekly. Approximately 90 percent are Negroes, and 98 percent are indigent. The majority have a venereal disease: either syphilis, gonorrhea, lymphogranuloma venereum, or granuloma inguinale. A certain percentage are in the advanced or chronic stages, and are hospitalized in the 88-bed hospital of the Medical Center. The majority of the patients are examined in the hospital's male and female outpatient clinics and domiciled in dormitories. Although the patient load of the Center is not a strict random sample because it consists largely of venereal disease suspects, it is felt that an important element of selectivity—namely the patient's desire for physical examination—is largely eliminated. This factor interferes with the random distribution of patients in many detection centers for, although applicants are presumably well, many seek examination because of some definite symptomatology.

A quota of approximately 50 examinees in the highest age groups for each day is routed through the cancer detection unit. A brief objective screening history (fig. 1) is elicited by trained history clerks and clinic nurses. A physician with special training in the diagnosis of cancer then studies pertinent data on the history sheet in more detail, and elaborates as needed. Experience has shown that an unhurried, sympathetic and generally pleasant approach makes possible the completion of a satisfactory history.

PHS-777-1 (INC)
4-48

PATIENT'S HISTORY
CANCER CONTROL

CLINIC NO. .....
C. C. U. NO. .....

NAME (*Last*)	(*First*)	(*Middle*)	DATE

AGE	DATE OF BIRTH (*Month, year*)	SEX ☐ Male ☐ Female	COLOR	MARITAL STATUS S M W D	WEIGHT

I. FAMILY HISTORY OF CANCER (*Died of cancer? Age at death, TYPE*)

II. PAST HISTORY
(1) MEDICAL

(2) SURGICAL

(3) VENEREAL DISEASE

MENSTRUAL HISTORY	CYCLE	L. M. P.
	METRORRHAGIA	MENORRHAGIA
	MENOPAUSE (*Date*)	HORMONAL TREATMENT
	POST MENOPAUSAL BLEEDING	X-RAY TREATMENT
OBSTETRICAL	NO. OF PREGNANCIES	NO. OF CHILDREN
	WERE BABIES BREAST FED?	AVERAGE LENGTH OF TIME

III. HABITS (*Smoking*)

IV. SYSTEMIC REVIEW

(1) GENERAL	WEIGHT LOSS	WEAKNESS	
(2) HEAD AND NECK	CHRONIC HOARSENESS	DYSPHAGIA	MOUTH SORES
(3) LUNGS	CHRONIC COUGH	HEMOPTYSIS	CHEST PAINS
(4) STOMACH	APPETITE	ABDOMINAL PAIN	INDIGESTION
(5) RECTUM	CHANGE IN BOWEL HABITS	BLOOD IN STOOL	MELENA
(6) SKIN	LUMPS	SORES	SKIN OPERATIONS
(7) GENITO-URINARY	HEMATURIA	FREQUENCY	DYSURIA
(8) BREASTS	LUMPS	NIPPLE DISCHARGE	TENDERNESS
(9) GYNECO-LOGIC	VAGINAL DISCHARGE	BLEEDING	PELVIC PAIN

Figure 1

PHS-777-2 (NC 1)
4-48
PHYSICAL EXAMINATION
CANCER CONTROL

CLINIC NO. .....

C. C. U. No. .....

NAME (*Last*)	(*First*)	(*Middle*)	DATE

AGE	DATE OF BIRTH (*Month, year*)	SEX	COLOR	MARITAL STATUS	WEIGHT
		☐ Male ☐ Female		S M W D	

LOCAL EVIDENCE TUMOR DISEASE:

GENERAL PHYSICAL CONDITION:

SKIN:
INSPECTION. PALPATION.

INTRAORAL:
INSPECTION. PALPATION.

NECK:
MASSES. THYROID.
TENDERNESS.

BREASTS:
MASSES. NIPPLE DISCHARGE.
TENDERNESS.

LUNGS:
AUSCULTATION. PERCUSSION.

HEART:
BP. P.
RYHTHM. APEX.
MURMURS.

ADBOMEN:
MASSES. PALPABLE VISCERA.
TENDERNESS. SCARS.
RIGIDITY.

PELVIC:
EXT. GENITALIA. UTERUS.
VAGINA. ADNEXAE.
CERVIX. URETHRA.

MALE GENITALIA:

RECTAL:
ANUS. PROSTATE.
MASSES. HEMORRHOIDS.
TENDERNESS.

BACK AND EXTREMITIES:

LYMPHATIC SYSTEM:

TUMOR DIAGNOSIS:
PROVISIONAL. FINAL.
CYTOLOGICAL.

OTHER DIAGNOSES:
(1)
(2)
(3)

DISPOSITION:

PHYSICAL DONE BY DR. .....

FOLLOW-UP NOTES:

Figure 2

A comprehensive physical examination is then made (fig. 2). It includes inspection of the skin, palpation of the lymph nodes and thyroid, inspection and palpation of the oral cavity, auscultation and percussion of the chest including the precordium, blood pressure determination, careful palpation of the abdomen, breast and pelvic examination in females and a rectal examination in males and females.

A routine vaginal and endocervical smear is prepared from each female patient. Gastric washings and prostatic secretions are now being studied in male examinees for evaluation of the cytologic test (fig. 3) as a screening device for gastric and prostatic carcinoma. A total blood count, serologic test for syphilis, hemoglobin determination and urinalysis are performed routinely.

PHS–777–3 (NC 1)
4–48

CLINIC NO. .....

CLINICAL ABSTRACT FOR CYTOLOGY LABORATORY
CANCER CONTROL

C. C. U. No. .....

NAME (*Last*)	(*First*)	(*Middle*)	DATE

AGE	DATE OF BIRTH (*Month, year*)	SEX ☐ Male ☐ Female	COLOR	MARITAL STATUS S M W D	WEIGHT

SLIDE NO.	MATERIAL FOR EXAMINATION

ABSTRACT OF HISTORY

	CYCLE	L. M. P.
	METRORRHAGIA	MENORRHAGIA
	MENOPAUSE (*Date*)	HORMONAL TREATMENT
	POST MENOPAUSAL BLEEDING	X-RAY TREATMENT

CLINICAL IMPRESSION .....

BY WHOM .....

REPORTS OF CYTOLOGIC TEST FOR CANCER

DATE .....

IMPRESSION .....

.....

BY WHOM .....

DATE .....

IMPRESSION .....

.....

BY WHOM .....

Figure 3

788667—48——3

Biopsies and other indicated diagnostic procedures are performed where necessary. For example, patients with rectal bleeding, a history of hemorrhoids, or other rectal symptoms are instructed to return the next day, after proper preparation, for proctoscopy.

At the termination of the examination, the examinee is advised by the physician of major abnormalities discovered. Patients under the care of a private physician are advised to report back to this physician for treatment. A complete summary of the case is sent to the family physician.

A routine socio-economic history is elicited before the patients enter the cancer detection unit. The indigent case requiring treatment is referred to the cancer clinic nearest his home. Before leaving the Center, patients requiring treatment are interviewed by the public health nurse who explains in more detail the nature of the diagnosis and emphasizes the need for prompt treatment, while at the same time taking pains to reassure the patient. She has the important duty of completing arrangements for admission to the treatment facility, and maintaining up-to-date follow-up records (fig. 4) on each referred case. A complete summary of referred cases is always sent to the treatment facility.

PHS-779(NCI)
4-48

FOLLOW-UP (CANCER CONTROL)

ADMISSION _____ CLINIC NO. _____
DISCHARGE _____ C.C.U. NO. _____

NAME (Last)	(First)	(Middle)	(Nickname)

AGE	SEX ☐ Male ☐ Female	COLOR	MARITAL STATUS S M W D
PRESENT ADDRESS	TELEPHONE	PERMANENT ADDRESS	
OCCUPATION	EMPLOYER	ADDRESS	
RELATIVE OR FRIEND		RELATION	
ADDRESS			
EMPLOYER		ADDRESS	

REFERRAL	NAME	ADDRESS
(1) HEALTH DEPARTMENT		
(2) PHYSICIAN		
(3) HOSPITAL		
(4) CANCER CLINIC		
(5) OTHER AGENCY		

CLINICAL IMPRESSION			DATE
CTC REPORT	DATE	CTC REPORT	DATE
CONFIRMED DIAGNOSIS		TISSUE SECTION? ☐ Yes ☐ No	DATE
FINAL DISPOSITION			DATE

DATE	DATE	DATE	DATE

Figure 4

Three agencies, the Arkansas State Cancer Commission, the State Health Department, and the University of Arkansas School of Medicine, play important roles in the program. The State Cancer Commission is mainly concerned with the care of indigent cancer cases, and accordingly provides for the treatment of many cases discovered at the Hot Springs project.

The State Health Department largely provides the case load of venereal disease patients through its program of Plantation Surveys, and transports them to the Medical Center. Through its local health units, it is in a position to follow up patients who have not reported to their family physicians as advised, or who do not return to the Medical Center for rechecks at the appointed time.

The University Hospital of the School of Medicine has accepted the majority of indigent patients for treatment. There are also four established cancer clinics in Arkansas which provide limited hospitalization for diagnosis and treatment. The indigent cases discovered in the Medical Center have been referred primarily to these three facilities.

Preliminary Report on Progress

During the first 6 months of operation, 1,500 women have been examined. Of these, 22 were found to have proven cancer, and were successfully referred to treatment sources. Twelve of the cases had early cancer of the cervix, and 7 of the 12 were diagnosed as carcinoma in situ. Six of the total group were under 40 years of age. A number of other patients have been referred for further diagnostic work, and many have been requested to return in 3 months for a recheck because of an equivocal clinical or cytologic impression.

Each of the 1,500 examinees has had at least one pair of slides prepared according to the methods of Papanicolaou and Traut and others, and a total of 300 biopsies were performed. The incidence of major abnormalities other than cancer is running well over 40 percent.

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(4) Dorn, Harold F.; Illness from cancer in the United States, Reprint No. 2537 from Pub. Health Rep., (May, 1944).
(5) L'Esperance, Elise S.; The early diagnosis of cancer, Bull. of the N. Y. Acad. Med., Vol. 23, No. 7 (July 1947).
(6) Unpublished survey of cancer detection centers, Am. Cancer Soc. New York City, January–March 1947.
(7) White, Benjamin V.; Geschickter, Charles F.; Diagnosis in Daily Practice, J. P. Lippincott and Co., Phila. 1948.

Revised Morbidity Reporting Requirements

The revised morbidity reporting requirements of the Public Health Service will become effective July 1, 1948. Under the new requirements, the reports on mortality which have in the past been sent to the Division of Public Health Methods have been eliminated. The data, instead, will be obtained through the National Office of Vital Statistics from either the death certificates or reports received by that office.

The reports which will no longer be required after July 1, 1948, are as follows:

1. Quarterly Mortality Report from the States—Form 8958–C.
2. Annual Mortality Summary from the States—Form 8964–B.
3. Annual Morbidity Summary from the States—Form 8964–A.
4. Annual Morbidity and Mortality Summary for Cities—Form 8960–B.

Several additions and deletions have been made in the disease categories reportable to the Public Health Service. The revised list of reports and diseases are:

1. Special Telegraphic Report on occurrence of cases of Cholera, Plague, Psittacosis, Epidemic Typhus and Yellow Fever.

2. Weekly Telegraphic Morbidity Report from the States on the number of new cases of the following diseases:

Anthrax
Diphtheria
Encephalitis, infectious
Influenza
Meningitis, meningococcal
Measles
Paratyphoid fever
Pneumonia (all forms)
Poliomyelitis
Rabies in animals
Rocky Mountain spotted fever
Scarlet fever
Smallpox
Tularemia
Typhoid fever
Whooping cough

Epidemic outbreak of any other disease

3. Monthly Morbidity Report (Form 8958–A) from the States on the total number of newly reported cases of the following diseases:

Anthrax
Brucellosis
Dengue
Diarrhea of the newborn, epidemic
Diphtheria
Dysentery, amebic
Dysentery, bacillary
Dysentery, unspecified
Encephalitis, infectious
Favus
Leprosy
Malaria:
  acquired in U. S.
  acquired outside U. S.
Measles
Meningitis, meningococcal
Ophthalmia neonatorum
Paratyphoid fever
Pneumonia (all forms)
Poliomyelitis:
  bulbar, polioencephalitis, and other paralytic
  Non-paralytic
  Unspecified
Psittacosis
Rabies in animals
Rabies in man
Rheumatic fever
Ringworm of the scalp
Rocky Mountain spotted fever
Smallpox
Streptococcal diseases:
  Scarlet fever
  Septic sore throat

Tetanus
Trachoma
Trichiniasis
Tuberculosis (all forms)
Tuberculosis (respiratory)
Tularemia
Typhoid fever
Typhus fever, endemic
Whooping cough

All other diseases notifiable in the State

4. Each State Health Officer will send two copies of the routine weekly (or monthly) tabulation of reportable diseases by county, which is released by the State Health Department, to the Public Health Service. States not issuing such releases will submit a special form each month giving county totals for the following diseases:

Diphtheria
Encephalitis, infectious
Malaria
Meningitis, meningococcal
Poliomyelitis
Rocky Mountain spotted fever
Smallpox
Tularemia
Typhoid fever
Paratyphoid fever
Typhus fever (endemic, or flea borne)
Undulant fever

5. The health officers in 102 selected cities will submit Post Card Form 8960–A weekly, direct to the Public Health Service, giving the number of new cases of the following diseases:

Anthrax
Diphtheria
Encephalitis, infectious
Influenza
Meningitis, meningococcal
Measles
Poliomyelitis, acute
Pneumonia (all forms)
Rocky Mountain spotted fever
Paratyphoid fever
Scarlet fever
Smallpox
Tularemia
Typhoid fever
Whooping cough

Four-week Summary of Communicable Disease Incidence

April 25–May 22, 1948

The accompanying table summarizes the incidence of nine important communicable diseases, based on weekly telegraphic reports from State health departments. The reports from each State for each week are published in PUBLIC HEALTH REPORTS under the section "Incidence of Disease." The table gives the number of cases of these diseases for the 4 weeks ended May 22, 1948, the number reported for the corresponding period in 1947, and the median number for the years 1943–47.

Diseases Above Median Incidence

Measles.—The number of cases of measles rose from 102,680 during the preceding 4 weeks to 114,983 during the 4 weeks ended May 22. The incidence was 3.4 times the number of cases reported for the

corresponding period in 1947, which was, however, a comparatively low measles year, but it was only about 10 percent above the 1943–47 median. In the New England and East South Central sections the incidence was below the normal expectancy and in the South Atlantic section the number of cases was only slightly higher than the median for the preceding 5 years, but in the other 6 sections the increases over the median expectancy ranged from 1.1 times the median in the West North Central section to 3.4 times the median in the West South Central section.

Poliomyelitis.—The number of cases of poliomyelitis rose from 126 during the preceding 4-week period to 440 during the current 4 weeks. The incidence was 3.5 times that reported for these weeks in 1947, which number (126 cases) also represents the 1943–47 median. An increase of this disease is expected at this season of the year, but the current number of cases represents a larger increase at this time than has normally occurred in preceding years. While each section of the country except New England contributed to the relatively high incidence, the greatest excesses over the 5-year medians were reported from the West North Central and West South Central sections. Of the total cases Texas reported 179, California 62, South Carolina 46, New Jersey 16, Iowa 14, Florida 12, Alabama 11, and Illinois, South Dakota, and Louisiana 10 each; 85 percent of the reported cases occurred in those 10 States which represent every section of the country except the New England and Mountain sections. Since the beginning of the year 947 cases of poliomyelitis have been reported as compared with 894 and 810 for the corresponding period in 1947 and 1946, respectively.

Diseases Below Median Incidence

Diphtheria—While the incidence of diphtheria was about the same as during the preceding 4 weeks, the number of cases (611) reported during the four weeks ended May 22 was less than 80 percent of the 1943–47 median for the corresponding periods. In the East South Central section the incidence was about 20 percent above the seasonal expectancy and in the New England section the number reported was normal, but in all other sections the numbers of cases were considerably below the medians for the preceding 5 years. For the country as a whole the current incidence was the lowest on record for these same weeks.

Influenza.—For the current 4 weeks there were 4,575 cases of influenza reported, as compared with 15,461 for the corresponding period in 1947 and a median of 5,272 for the preceding 5 years (1943–47). The number of cases in each section was below the 1947 figure, and the numbers were below the median in all sections except the South Atlantic; in that section the number of cases was 1.2 times the

5-year median. With the exception of the year 1946 when 3,873 cases were reported for these same weeks, the current incidence was the lowest for this period since 1938 when 2,796 cases were reported.

Meningococcus meningitis.—The number of cases (274) of meningococcus meningitis reported for the 4 weeks ended May 22 was less than 85 percent of the number reported for the corresponding period in 1947 and less than 40 percent of the median for the preceding 5 years. After a period of unusually high incidence this disease has dropped to a level more nearly normal for a nonepidemic year, with each section of the country sharing in the favorable situation that now exists. The median for the preceding 5 years contains 3 years of unusually high meningitis incidence; the average incidence for this period during nonepidemic years is approximately 240 cases. A decline in this disease is normally expected at this season of the year, but the decline during the current 4-week period from the preceding 4 weeks was not as great as has occurred in preceding years.

Scarlet fever.—The number of cases of scarlet fever dropped from 8,312 during the preceding 4 weeks to 7,891 during the 4 weeks ended May 22. The number of cases was only slightly below the record low incidence of 1947, but it was 50 percent below the 1943–47 median. In each section of the country the incidence was below the 5-year median expectancy. This disease has been on a gradual decline since 1944; during that year there were approximately 26,000 cases reported during the period corresponding to the one under consideration.

Smallpox.—There were 5 cases of smallpox reported during the current 4-week period, 1 each in Missouri, Kansas, Alabama, Mississippi, and Louisiana. During the corresponding period in 1947 there were 39 cases reported and the 1943–47 median was 41 cases. The East North Central section reported none as compared with a 5-year median of 16, and the West North Central section reported 2 cases as compared with a median of 8 cases, with minor declines from the medians in other sections. For the country as a whole the current incidence was the lowest on record for this period.

Typhoid and paratyphoid fever.—The incidence of these diseases (242 cases) during the current 4 weeks was slightly below the 1947 figure for this period and was about 85 percent of the 1943–47 median. In the South Atlantic section the number of cases (60) was 1.2 times the 5-year median and in the East South Central section the incidence was about normal, but in all other sections the numbers of cases were below the normal expectancy. For the entire country the current incidence was the lowest for this period in the 20 years for which data are available in this form.

Whooping cough.—The number of cases (7,158) of whooping cough was less than 50 percent of the 1947 incidence for the corresponding 4-week period and less than 70 percent of the median for the pre-

ceding 5 years. In the West South Central section the number of cases (1,972) was 1.5 times the median expectancy and in the West North Central section the incidence (455 cases) was 1.3 times the normal incidence, but in all other sections the number of cases was lower than the seasonal expectancy.

Mortality, All Causes

For the 4 weeks ended May 22 there was 36,439 deaths from all causes reported to the National Office of Vital Statistics by 93 large cities. The median number for the preceding 3 years was 36,246 deaths. The number of deaths was higher than the median during each of the first 3 weeks of the 4-week period, but during the last week the number of deaths was 2 percent below the median for the corresponding week in the 3 preceding years.

Reported cases of 9 communicable diseases in the United States during the 4-week period Apr. 25–May 22, 1948, the number for the corresponding period in 1947, and the median number of cases reported for the corresponding period, 1943–47

Division	Current period	1947	5-year median	Current period	1947	5-year median	Current period	1947	5-year median
	Diphtheria			Influenza [1]			Measles		
United States	611	785	785	4,575	15,461	5,272	114,983	34,109	104,755
New England	27	52	27	19	62	62	6,720	7,818	8,089
Middle Atlantic	85	177	120	22	33	33	28,603	5,454	14,927
East North Central	104	100	117	114	277	277	28,170	6,942	19,422
West North Central	42	74	74	40	857	102	5,978	3,967	5,337
South Atlantic	124	114	142	1,736	7,254	1,399	6,924	3,771	6,866
East South Central	62	51	52	174	1,371	388	2,046	1,552	2,269
West South Central	92	96	124	2,000	4,484	2,245	11,104	2,066	3,310
Mountain	35	57	57	303	893	461	6,892	1,457	3,724
Pacific	40	64	99	167	230	230	18,546	1,082	7,313
	Meningococcus meningitis			Poliomyelitis			Scarlet fever		
United States	274	331	712	440	126	126	7,891	7,989	15,612
New England	8	20	34	0	3	5	1,056	692	2,023
Middle Atlantic	53	53	156	27	14	14	2,348	2,490	4,577
East North Central	59	73	133	23	9	9	2,388	2,303	4,013
West North Central	35	34	49	37	17	6	499	681	1,153
South Atlantic	21	50	93	67	15	16	449	503	1,276
East South Central	33	28	71	16	5	7	151	237	339
West South Central	29	35	68	191	15	26	160	142	319
Mountain	8	3	15	12	5	5	271	319	765
Pacific	28	35	93	67	43	29	569	622	888
	Smallpox			Typhoid and paratyphoid fever			Whooping cough		
United States	5	39	41	242	255	281	7,158	14,589	10,548
New England	0	0	0	15	23	20	397	842	965
Middle Atlantic	0	2	0	18	27	31	900	2,198	2,193
East North Central	0	11	16	36	58	39	891	2,588	1,683
West North Central	2	10	8	7	10	10	455	590	343
South Atlantic	0	2	2	60	31	51	1,059	2,066	1,629
East South Central	2	3	6	27	19	25	367	659	468
West South Central	1	2	4	57	49	64	1,972	3,432	1,341
Mountain	0	9	4	4	6	16	504	597	536
Pacific	0	0	2	18	32	24	613	1,617	1,617

[1] New York, North Carolina, and Pennsylvania excluded; New York City and Philadelphia included.

INCIDENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

REPORTS FROM STATES FOR WEEK ENDED MAY 29, 1948

Summary

Of the total of 138 cases of poliomyelitis reported for the current week (last week 127, 5-year median 39), 108 occurred in the 6 States reporting more than 4 cases each, as follows (last week's figures in parentheses): Texas 60 (39), North Carolina 14 (13), California 14 (24), South Dakota 10 (9), Georgia 5 (3), and Florida 5 (5). The 8 States reporting more than 11 cases in the 4-week period since May 1 are as follows (figures for the corresponding period last year in parentheses): New Jersey 13 (2), Iowa 13 (3), South Dakota 19 (0), North Carolina 53 (2), Florida 14 (7), Louisiana 12 (2), Texas 195 (12), California 73 (42). The total reported since March 20 (approximate average date of seasonal low incidence) is 730, as compared with a 5-year median of 302 reported for the corresponding period last year. The highest number reported for a corresponding period of the past 5 years was 421, in 1946, and the lowest 236, in 1944.

A total of 26,409 cases of measles was reported, as compared with 29, 319 last week and a 5-year median of 17,935. Significant increases were reported in only a few States. The total for the year to date is 419,563, as compared with 134,454 for the same period last year and a 5-year median of 422,983.

Of the total of 13 cases of Rocky Mountain spotted fever reported (last week 23, 5-year median 9), Illinois, Oklahoma, and Colorado reported 2 each, and New Jersey, South Dakota, Maryland, Virginia, North Carolina, Arkansas, and Wyoming 1 each.

Five cases of anthrax were reported, 2 each in New Jersey and Pennsylvania, and 1 in Louisiana. Of 89 cases of typhoid fever reported (last week 61, 5-year median 68), Texas reported 37 (last week 10).

Deaths recorded for the week in 93 large cities in the United States totaled 8,971, as compared with 8,744 last week, 8,130 and 8,272, respectively, for the corresponding weeks of 1947 and 1946, and a 3-year (1945–47) median of 8,272. The total for the year to date is 215,944, as compared with 215,498 for the same period last year. Infant deaths totaled 674, as compared with 587 last week and a 3-year median of 614. The total to date is 15,076, as compared with 17,218 for the corresponding period last year.

Telegraphic morbidity reports from State health officers for the week ended May 29, 1948, and comparison with corresponding week of 1947 and 5-year median

In these tables a zero indicates a definite report, while leaders imply that, although none was reported, cases may have occurred.

Division and State	Diphtheria			Influenza			Measles			Meningitis, meningococcus		
	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47
	May 29, 1948	May 24, 1947		May 29, 1948	May 24, 1947		May 29, 1948	May 24, 1947		May 29, 1948	May 24, 1947	
NEW ENGLAND												
Maine	4	1	1	------	------	------	23	104	104	0	0	0
New Hampshire	0	0	0	------	------	------	10	2	7	0	0	0
Vermont	0	0	0	------	------	------	10	114	62	0	0	0
Massachusetts	4	3	3	------	------	------	1,296	405	982	0	2	6
Rhode Island	0	2	0	------	------	------	12	123	60	0	0	0
Connecticut	0	1	0	1	1	1	245	952	473	2	0	2
MIDDLE ATLANTIC												
New York	10	16	16	[1] 4	[1] 14	[1] 3	2,506	616	616	8	7	26
New Jersey	2	7	3	1	------	[1] 5	2,667	447	925	1	3	11
Pennsylvania	9	13	12	(2)	(2)	[2] 1	1,828	323	600	1	6	9
EAST NORTH CENTRAL												
Ohio	3	9	9	------	6	7	1,034	825	745	5	3	8
Indiana	2	1	7	------	4	4	242	117	117	0	0	3
Illinois	2	3	7	8	71	4	807	331	419	3	5	16
Michigan [3]	2	5	5	------	1	1	2,015	173	886	3	5	5
Wisconsin	1	0	2	10	16	16	1,765	988	2,122	0	0	2
WEST NORTH CENTRAL												
Minnesota	1	3	3	------	------	------	281	839	476	0	3	3
Iowa	1	4	2	------	------	------	171	119	226	2	0	1
Missouri	11	4	2	3	1	1	147	43	113	1	2	12
North Dakota	0	1	1	------	------	5	48	125	13	0	1	0
South Dakota	0	1	1	------	1	------	69	136	44	1	0	0
Nebraska	0	1	1	------	------	1	216	6	19	1	0	0
Kansas	2	1	5	2	2	1	59	17	201	0	1	1
SOUTH ATLANTIC												
Delaware	2	0	0	------	------	------	48	1	8	0	0	0
Maryland [3]	1	5	8	------	2	3	804	65	221	1	3	4
District of Columbia	1	0	0	------	1	------	138	9	92	0	0	1
Virginia	0	3	4	89	324	81	210	262	262	3	2	9
West Virginia	1	0	2	2	18	9	74	63	63	0	0	0
North Carolina	10	3	3	------	------	------	32	157	293	1	0	4
South Carolina	4	2	8	220	243	180	306	107	107	1	0	2
Georgia	1	2	2	------	3	6	33	75	75	0	0	1
Florida	5	5	2	6	7	3	210	35	48	0	0	3
EAST SOUTH CENTRAL												
Kentucky	9	8	3	------	------	1	137	22	74	2	2	3
Tennessee	2	5	2	10	79	8	195	44	69	2	7	3
Alabama	6	4	4	12	86	37	39	264	135	*1	1	7
Mississippi [3]	1	6	6	3	24	------	31	19	------	2	3	3
WEST SOUTH CENTRAL												
Arkansas	3	4	3	23	24	10	123	52	52	0	0	3
Louisiana	1	9	2	2	2	2	87	19	34	0	1	1
Oklahoma	0	2	2	22	72	19	70	3	35	0	0	0
Texas	19	13	30	320	428	421	2,257	406	457	0	4	9
MOUNTAIN												
Montana	0	0	0	1	2	------	41	92	92	0	0	0
Idaho	0	0	0	12	27	------	119	9	21	0	0	0
Wyoming	0	1	0	------	11	------	48	4	56	0	0	0
Colorado	2	3	7	7	41	17	429	64	114	0	0	1
New Mexico	4	3	3	4	1	1	41	89	65	0	0	0
Arizona	4	1	4	37	46	33	346	69	69	1	0	0
Utah [3]	6	0	0	------	2	4	647	12	134	0	0	0
Nevada	0	0	0	------	------	------	------	------	1	0	0	0
PACIFIC												
Washington	5	4	4	------	16	------	720	23	278	2	0	1
Oregon	0	1	1	7	10	5	409	20	69	0	0	1
California	10	15	15	12	24	18	3,364	166	1,463	1	6	13
Total	151	175	189	818	1,610	1,009	26,409	8,956	17,935	45	67	182
21 weeks	3,916	5,392	5,392	133,138	295,843	185,224	419,563	134,454	422,983	*1,649	1,827	4,704
Seasonal low week [4]	(27th) July 5–11			(30th) July 26–Aug. 1			(35th) Aug. 30–Sept. 5			(37th) Sept. 13–19		
Total since low	10,274	12,958	14,136	176,696	328,818	328,818	454,509	157,341	460,996	*2,431	2,799	7,156

*Delayed report (included in cumulative totals only): Alabama, meningitis, 2.
[1] New York City only. [2] Philadelphia only. [3] Period ended earlier than Saturday.
[4] Dates between which the approximate low week ends. The specific date will vary from year to year.

Telegraphic morbidity reports from State health officers for the week ended May 29, 1948, and comparison with corresponding week of 1947 and 5-year median—Con.

Division and State	Poliomyelitis			Scarlet fever			Smallpox			Typhoid and paratyphoid fever		
	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47	Week ended—		Median 1943–47
	May 29, 1948	May 24, 1947		May 29, 1948	May 24, 1947		May 29, 1948	May 24, 1947		May 29, 1948	May 24, 1947	
NEW ENGLAND												
Maine	0	0	0	10	8	23	0	0	0	1	0	0
New Hampshire	0	0	0	2	4	11	0	0	0	0	0	0
Vermont	0	0	0	3	12	10	0	0	0	0	0	0
Massachusetts	0	0	0	222	98	286	0	0	0	2	1	2
Rhode Island	0	0	0	3	7	12	0	0	0	0	0	0
Connecticut	0	0	0	31	34	57	0	0	0	0	0	1
MIDDLE ATLANTIC												
New York	2	1	1	[5] 195	289	448	0	0	0	[6] 1	4	2
New Jersey	0	1	0	54	132	132	0	0	0	2	1	1
Pennsylvania	0	0	1	224	223	395	0	0	0	[7] 4	2	5
EAST NORTH CENTRAL												
Ohio	1	1	1	281	192	301	0	1	1	1	8	1
Indiana	1	0	0	38	39	39	0	0	2	0	1	1
Illinois	1	0	0	102	72	179	0	0	0	1	12	2
Michigan [3]	0	0	0	177	135	135	0	0	0	1	1	0
Wisconsin	0	0	0	50	56	244	0	0	0	0	0	0
WEST NORTH CENTRAL												
Minnesota	2	0	0	23	39	56	0	0	0	0	0	0
Iowa	4	0	0	47	18	42	0	0	0	0	0	0
Missouri	1	0	0	[5] 11	27	49	0	0	0	3	0	0
North Dakota	0	1	0	2	2	5	0	0	0	2	0	0
South Dakota	10	0	0	6	4	8	0	0	0	0	0	0
Nebraska	1	1	0	8	11	11	0	0	0	1	2	0
Kansas	0	0	1	8	20	45	0	0	0	0	0	1
SOUTH ATLANTIC												
Delaware	0	0	0	1	8	4	0	0	0	1	0	0
Maryland [3]	0	2	0	[5] 29	37	98	0	0	0	0	3	2
District of Columbia	0	0	0	0	7	12	0	0	0	0	0	0
Virginia	2	0	1	5	25	37	0	0	0	[6] 4	3	1
West Virginia	0	0	0	5	10	17	0	0	0	1	1	1
North Carolina	14	1	1	13	20	20	0	0	0	0	1	1
South Carolina	1	0	0	4	4	5	0	0	0	2	1	2
Georgia	5	0	1	14	1	7	0	1	0	[6] 3	4	4
Florida	5	3	3	2	2	3	0	0	0	4	0	3
EAST SOUTH CENTRAL												
Kentucky	0	0	0	4	10	33	0	0	0	2	5	1
Tennessee	2	0	0	21	14	25	0	0	0	4	7	4
Alabama	* 0	1	1	2	5	8	0	0	0	1	2	3
Mississippi [3]	0	2	0	2	0	4	0	0	0	2	1	2
WEST SOUTH CENTRAL												
Arkansas	2	0	1	2	5	4	0	0	0	[7] 2	2	2
Louisiana	2	0	1	2	4	1	0	1	0	[6] 4	2	3
Oklahoma	0	0	0	4	3	4	0	0	0	0	3	1
Texas	60	5	6	31	23	43	0	1	0	37	14	7
MOUNTAIN												
Montana	0	0	0	2	4	14	0	0	0	0	1	0
Idaho	3	0	0	[5] 6	5	18	0	0	0	0	0	1
Wyoming	0	0	0	0	7	6	0	0	0	0	0	0
Colorado	0	0	0	11	28	34	0	0	0	1	0	0
New Mexico	0	0	0	9	3	7	0	0	0	0	1	0
Arizona	3	2	1	1	4	15	0	0	0	0	1	1
Utah [3]	0	0	0	4	7	19	0	0	0	0	0	0
Nevada	0	0	0	0	0	0	0	0	0	0	0	0
PACIFIC												
Washington	2	2	2	33	24	43	0	0	0	0	0	0
Oregon	0	1	0	14	16	26	0	0	0	0	0	1
California	14	10	9	73	113	145	0	0	0	2	4	4
Total	138	34	39	1,791	1,811	3,088	0	4	7	89	88	68
21 weeks	*1,078	914	740	46,711	52,672	82,498	45	131	216	[7] 1,080	1,024	1,236
Seasonal low week [4]	(11th) Mar. 15–21			(32nd) Aug. 9–15			(35th) Aug. 30–Sept. 5			(11th) Mar. 15–21		
Total since low	* 730	302	302	69,250	79,358	120,819	66	185	294	[7] 607	539	619

*Delayed report (included in cumulative totals only): Alabama, poliomyelitis, 2.

[3] Period ended earlier than Saturday.

[4] Dates between which the approximate low week ends. The specific date will vary from year to year.

[5] Including cases reported as streptococcal infections and septic sore throat.

[6] Including paratyphoid fever and salmonella infections reported separately, as follows: New York (salmonella infection) 1, Virginia 1, Georgia 3, Louisiana 2.

[7] Correction (deducted from cumulative totals): Typhoid fever, Pennsylvania, week ended March 20, 2 cases (instead of 3); Arkansas, week ended May 8, 3 cases (instead of 4).

Telegraphic morbidity reports from State health officers for the week ended May 29, 1948, and comparison with corresponding week of 1947 and 5-year median—Con.

Division and State	Whooping cough			Week ended May 29, 1948							
	Week ended—		Median 1943–47	Dysentery			Encephalitis, infectious	Rocky Mt. spotted fever	Tularemia	Typhus fever, endemic	Undulant fever
	May 29, 1948	May 24, 1947		Amebic	Bacillary	Unspecified					
NEW ENGLAND											
Maine	3	6	6								
New Hampshire	3		3								
Vermont	24	9	12								1
Massachusetts	29	127	118		4						2
Rhode Island	9	21	20								
Connecticut	15	53	53								1
MIDDLE ATLANTIC											
New York	69	199	199	15	4		3				3
New Jersey	48	235	117	3				1			
Pennsylvania	43	159	159		1						
EAST NORTH CENTRAL											
Ohio	36	174	94	4							8
Indiana	8	62	30		1						3
Illinois	31	85	85	4	4		1	2			12
Michigan [3]	21	274	108	20							3
Wisconsin	44	136	98								14
WEST NORTH CENTRAL											
Minnesota	11	50	20		1						1
Iowa	14	11	11	2			1				1
Missouri	18	35	18								5
North Dakota	1	4	2								
South Dakota		2	2					1			2
Nebraska	1	11	5	1							3
Kansas	36	37	37								3
SOUTH ATLANTIC											
Delaware		2	1								
Maryland [3]	3	88	55			1		1			3
District of Columbia	3	1	8								
Virginia	49	61	80			24		1	3		3
West Virginia	11	38	21								
North Carolina	29	94	147					1			1
South Carolina	117	142	91		11				1		1
Georgia	13	82	13		1	1				2	3
Florida	28	47	22	2						1	2
EAST SOUTH CENTRAL											
Kentucky	46	50	50				1				1
Tennessee	24	58	58	10			1				2
Alabama	33	37	35	(*)						1	1
Mississippi [3]	2	25							5	1	3
WEST SOUTH CENTRAL											
Arkansas	23	26	18	12		48		1	7		3
Louisiana	1	21	9	5					1	2	1
Oklahoma	12	15	15	5				2	2		2
Texas	351	983	263	37	493	97			6	8	26
MOUNTAIN											
Montana	4	10	6						1		
Idaho	5	31	3								
Wyoming	1	3	1					1	1		
Colorado	28	33	23					2			9
New Mexico	15	15	10								
Arizona	36	51	23			77	1				
Utah [3]	18	7	43								2
Nevada											
PACIFIC											
Washington	28	22	24								1
Oregon	48	16	27	9							
California	63	347	347	4	2		1				2
Total	1,455	3,995	2,540	133	525	248	9	13	27	15	128
Same week, 1947	3,995			64	351	140	5	17	23	25	101
Median, 1943–47	2,540			33	375	117	10	9	20	54	[8]101
21 weeks: 1948	43,471			*1,565	6,575	3,956	186	65	388	299	1,920
1947	59,710			1,016	6,212	4,095	140	63	644	774	2,203
Median, 1943–47	52,392			628	6,212	2,255	177	63	364	963	[8]1,86

[3] Period ended earlier than Saturday.

[8] 3-year median 1945–47.

*Delayed report (included in cumulative totals only): Alabama, amebic dysentery 1.

Anthrax: New Jersey, 2; Pennsylvania, 2; Louisiana, 1. *Leprosy:* Louisiana, 2.

Alaska, week ended May 22, measles 2; week ended May 29, measles 8, meningitis 1, mumps 1, pneumonia 5, rheumatic fever 1, scarlet fever 2.

Territory of Hawaii: week ended May 29: Rabies 0, bacillary dysentery 6, measles 6, scarlet fever 7, whooping cough 11.

WEEKLY REPORTS FROM CITIES*

City reports for week ended May 22, 1948

This table lists the reports from 89 cities of more than 10,000 population distributed throughout the United States, and represents a cross section of the current urban incidence of the diseases included in the table.

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
NEW ENGLAND												
Maine:												
Portland	2	0	-----	0	1	0	2	0	1	0	0	-----
New Hampshire:												
Concord	0	0	-----	0	2	0	2	0	0	0	0	-----
Vermont:												
Barre	0	0	-----	0	-----	0	0	0	0	0	0	-----
Massachusetts:												
Boston	1	0	-----	1	255	1	11	0	107	0	2	6
Fall River	0	0	-----	0	32	0	0	0	2	0	0	-----
Springfield	0	0	-----	0	7	0	0	0	2	0	0	-----
Worcester	0	0	-----	0	31	0	8	0	3	0	0	4
Rhode Island:												
Providence	0	0	1	0	17	0	5	0	8	0	0	1
Connecticut:												
Bridgeport	0	0	-----	0	1	0	0	0	3	0	0	1
Hartford	0	0	-----	0	5	0	0	0	0	0	0	-----
New Haven	0	0	-----	0	8	0	0	0	4	0	0	5
MIDDLE ATLANTIC												
New York:												
Buffalo	1	0	-----	0	69	0	4	0	15	0	0	3
New York	7	0	9	0	1,445	2	48	0	59	0	0	22
Rochester	0	0	-----	0	2	1	7	0	11	0	0	-----
Syracuse	0	0	-----	0	12	0	0	0	10	0	0	7
New Jersey:												
Camden	0	0	-----	0	22	0	3	0	0	0	0	-----
Newark	0	0	1	0	445	0	0	0	7	0	0	2
Trenton	0	0	-----	0	3	0	3	0	1	0	0	-----
Pennsylvania:												
Philadelphia	4	0	2	2	1,062	1	13	0	56	0	1	9
Pittsburgh	0	0	-----	0	22	0	5	0	70	0	0	3
Reading	0	0	-----	1	12	0	2	0	6	0	0	3
EAST NORTH CENTRAL												
Ohio:												
Cincinnati	0	0	-----	0	149	1	2	0	7	0	0	4
Cleveland	0	0	-----	1	49	1	4	2	30	0	0	5
Columbus	0	0	-----	0	29	0	0	0	4	0	0	-----
Indiana:												
Fort Wayne	0	0	-----	0	8	0	0	0	4	0	0	-----
Indianapolis	2	0	-----	0	226	0	1	0	1	0	0	3
South Bend	0	0	-----	0	6	0	0	0	4	0	0	2
Terre Haute	0	0	-----	0	-----	0	0	0	0	0	0	-----
Illinois:												
Chicago	1	0	-----	0	333	6	15	0	34	0	0	13
Springfield	0	0	-----	0	5	0	3	0	0	0	0	4
Michigan:												
Detroit	1	5	-----	0	724	1	6	0	0	0	0	5
Flint	0	0	-----	0	22	0	0	0	3	0	0	-----
Grand Rapids	0	0	-----	0	6	1	0	0	5	0	0	2
Wisconsin:												
Kenosha	0	0	-----	0	67	0	0	0	0	0	0	-----
Milwaukee	0	0	-----	0	209	0	3	0	18	0	0	4
Racine	0	0	-----	0	25	0	0	0	2	0	0	3
Superior	0	0	-----	0	120	0	0	0	0	0	0	-----
WEST NORTH CENTRAL												
Minnesota:												
Duluth	0	0	-----	0	217	0	1	0	3	0	0	-----
Minneapolis	1	0	-----	0	13	0	3	0	13	0	0	2
St. Paul	0	0	-----	0	33	0	2	2	7	0	1	4
Missouri:												
Kansas City	0	0	4	0	32	0	2	0	5	0	0	12
St. Joseph	0	0	-----	0	11	0	0	0	0	0	0	-----
St. Louis	1	0	1	0	59	1	1	1	7	0	1	5

*In some instances the figures include nonresident cases.

City reports for week ended May 22, 1948—Continued

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
WEST NORTH CENTRAL—continued												
Nebraska:												
Omaha	0	0		1	37	0	1	1	1	0	0	2
Kansas:												
Topeka	0	0		0	9	0	1	0	0	0	0	
Wichita	0	0		0	8	0	4	0	1	0	0	4
SOUTH ATLANTIC												
Maryland:												
Baltimore	4	0		0	573	0	1	0	6	0	0	9
Cumberland	0	0		0		0	0	0	1	0	0	
Frederick	1	0		0		0	1	0	0	0	0	
District of Columbia:												
Washington	0	0		0	123	1	3	0	7	0	0	3
Virginia:												
Lynchburg	0	0		0		0	1	0	0	0	0	
Richmond	0	0		1	11	0	2	0	3	0	0	1
Roanoke	0	0		0	1	0	0	0	2	0	0	
West Virginia:												
Charleston	0	0		0	8	0	6	0	0	0	0	
Wheeling	0	0		0		0	1	0	0	0	0	
North Carolina:												
Raleigh	0	0		0	1	0	0	0	0	0	0	
Wilmington	0	0		0		0	0	0	2	0	0	3
Winston-Salem	0	0		0		0	3	1	0	0	0	
South Carolina:												
Charleston	0	0	6	0	1	0	2	0	1	0	0	14
Georgia:												
Atlanta	0	0		0	4	0	0	0	3	0	0	1
Brunswick	0	0		0		0	0	0	0	0	0	
Savannah	0	0		0	10	0	0	1	2	0	0	
Florida:												
Tampa	1	0		0	14	0	3	0	2	0	0	1
EAST SOUTH CENTRAL												
Tennessee:												
Memphis	0	0		1	24	1	6	0	1	0	0	5
Nashville	0	0		0	6	0	2	0	2	0	0	1
Alabama:												
Birmingham	1	0		0		0	0	0	5	0	1	1
Mobile	0	0		0		0	1	0	2	0	0	
WEST SOUTH CENTRAL												
Arkansas:												
Little Rock	0	0	2	0	10	0	0	0	0	0	0	3
Louisiana:												
New Orleans	1	0		0		0	5	1	1	0	2	
Shreveport	0	0		0		0	2	0	1	0	0	
Oklahoma:												
Oklahoma City	0	0		0	1	0	3	0	0	0	0	
Texas:												
Dallas	1	0		0	127	1	4	1	8	0	1	2
Galveston	0	0		0	1	0	2	2	1	0	0	
Houston	0	0	3	1	2	0	2	8	1	0	2	
San Antonio	1	0		0	10	0	6	2	0	0	0	1
MOUNTAIN												
Montana:												
Billings	0	0		0		0	1	0	0	0	0	
Great Falls	0	0		0		0	1	0	0	0	0	
Helena	0	0		0	1	0	0	0	0	0	0	
Missoula	0	0		0	1	0	0	0	0	0	0	
Idaho:												
Boise	0	0		0		0	1	0	0	0	0	
Colorado:												
Denver	3	0	1	0	166	1	5	0	7	0	0	14
Pueblo	0	0		0	75	0	1	0	3	0	0	1
Utah:												
Salt Lake City	1	0		0	232	0	0	0	6	0	0	3

City reports for week ended May 22, 1948—Continued

Division, State, and City	Diphtheria cases	Encephalitis, infectious, cases	Influenza		Measles cases	Meningitis, meningococcus, cases	Pneumonia deaths	Poliomyelitis cases	Scarlet fever cases	Smallpox cases	Typhoid and paratyphoid fever cases	Whooping cough cases
			Cases	Deaths								
PACIFIC												
Washington:												
Seattle	0	0	.....	0	271	0	7	1	0	0	0	3
Spokane	0	0	.....	0	6	0	2	0	1	0	0	.....
Tacoma	0	0	.....	0	16	0	0	0	4	0	0	.....
California:												
Los Angeles	1	0	5	0	403	0	1	6	13	0	0	3
Sacramento	0	0	.....	0	50	0	3	0	0	0	0	6
San Francisco	2	0	2	0	177	0	8	0	17	0	0	.....
Total	38	5	37	9	8,175	20	248	29	616	0	11	215
Corresponding week, 1947 [1]	62	.....	42	11	2,826	.....	284	.....	655	0	12	957
Average 1943–47	60	.....	42	[2] 12	[3] 4,760	.....	[2] 284	.....	1,244	0	13	694

[1] Exclusive of Oklahoma City. [2] 3-year average, 1945–47. [3] 5-year median, 1943–47.

Rates (annual basis) per 100,000 population, by geographic groups, for the 89 cities in the preceding table (latest available estimated population, 34,485,700)

	Diphtheria case rates	Encephalitis, infectious, case rates	Influenza		Measles case rates	Meningitis, meningococcus, case rates	Pneumonia death rates	Poliomyelitis case rates	Scarlet fever case rates	Smallpox case rates	Typhoid and paratyphoid fever case rates	Whooping cough case rates
			Case rates	Death rates								
New England	7.8	0.0	2.6	2.6	938	2.6	73.2	0.0	340	0.0	5.2	44
Middle Atlantic	5.6	0.0	5.6	1.4	1,432	1.9	39.3	0.0	109	0.0	0.5	23
East North Central	2.4	3.0	0.0	0.6	1,203	6.1	20.7	1.2	68	0.0	0.0	27
West North Central	4.0	0.0	10.1	2.0	843	2.0	30.2	8.0	74	0.0	4.0	58
South Atlantic	10.2	0.0	10.2	1.7	1,266	1.7	39.0	3.4	49	0.0	0.0	54
East South Central	5.9	0.0	0.0	5.9	177	5.9	53.1	0.0	59	0.0	5.9	41
West South Central	7.6	0.0	12.7	2.5	384	2.5	61.0	35.6	30	0.0	12.7	15
Mountain	31.8	0.0	7.9	0.0	3,773	7.9	71.5	0.0	127	0.0	0.0	143
Pacific	4.7	0.0	11.1	0.0	1,460	0.0	33.2	11.1	55	0.0	0.0	19
Total	5.8	0.8	5.6	1.4	1,239	3.0	37.6	4.4	93	0.0	1.7	33

Dysentery, amebic.—Cases: New York, 7; Memphis 2; New Orleans 2; Los Angeles 3.
Dysentery, bacillary.—Cases: Worcester 7; New York 4; Charleston, S. C. 1; New Orleans 1; Los Angeles 3.
Dysentery, unspecified.—Cases: San Antonio 79.
Rocky Mountain spotted fever.—Cases: St. Louis 1; Nashville 1; Washington 1.
Tularemia.—Cases: Missoula City 1.
Typhus fever, endemic.—Cases: Tampa 1.

PLAGUE INFECTION IN NEW MEXICO AND TEXAS

Under dates of May 25 and 28 plague infection was reported proved in pools of fleas from rodents in New Mexico and Texas, as follows:

NEW MEXICO

Catron County.—A pool of 120 fleas from 18 grasshopper mice, *Onychomys leucogaster*, trapped May 14 on State Highway No. 12, 10 miles southwest of Datil.

Rio Arriba County.—Pools of fleas from prairie dogs, *Cynomys gunnisoni gunnisoni*, as follows: 80 fleas from 12 prairie dogs shot

May 11 on a ranch 4½ miles southeast of Parkview on State Highway No. 95; 14 fleas from 16 prairie dogs, shot on a ranch 13 miles west of Parkview on State Highway No. 95; 46 fleas from 3 prairie dogs shot 7 miles east of Dulce, on State Highway No. 17.

Socorro County.—A pool of 89 fleas from 35 wood rats, *Neotoma albigula*, trapped May 6 in the Cibola National Forest, on State Highway No. 52, 6 miles north of a point 10 miles west of Magdalena.

TEXAS

Gaines County.—Pools of fleas from pack rats, *Neotoma micropus*, taken at locations distant from Cedar Lake, as follows: One mile southeast, April 6 and 7, a pool of 137 fleas and a pool of 126 fleas from 38 rates; 2¼ miles southeast, April 13, a pool of 22 fleas from 12 rats; 2 miles southeast, April 14 and 15, a pool of 86 fleas from 22 rats; 5 miles south of White City at Cedar Lake and 1 mile east, a pool of 43 fleas from 3 rats.

These are the first findings of plague infection in Gaines County although it has been previously reported in adjacent Dawson County.

FOREIGN REPORTS

CANADA

Provinces—Communicable diseases—Week ended May 8, 1948.—During the week ended May 8, 1948, cases of certain communicable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
Chickenpox		32	1	168	284	53	24	12	101	675
Diphtheria				11		1	2			14
Dysentery:										
Amebic						1		1		2
Bacillary				2						2
Encephalitis, infectious								1		1
German measles				34	12	6	6	6	5	69
Influenza		14			23	37			1	75
Measles			3	740	1,127	16	11	51	85	2,033
Meningitis, meningococcus						1				1
Mumps		9		250	250	69	76	43	16	713
Poliomyelitis					1					1
Scarlet fever		2	1	56	63	6		1	6	135
Tuberculosis (all forms)		10	34	113	45	38	16	7		263
Typhoid and paratyphoid fever				11	1		1			13
Undulant fever				2		1		1		4
Venereal diseases:										
Gonorrhea	2	15	9	77	53	19	21	35	55	286
Syphilis	1	7	4	44	57	7	2	4	14	140
Whooping cough				53	16	8	3	59	9	148

JAPAN

Notifiable diseases—4 weeks ended May 1, 1948, and accumulated totals for the year to date.—For the 4 weeks ended May 1, 1948, and for the year to date, certain notifiable diseases were reported in Japan as follows:

Disease	4 weeks ended May 1, 1948		Total reported for the year to date	
	Cases	Deaths	Cases	Deaths
Diphtheria	1,409	117	6,962	712
Dysentery, unspecified	342	83	956	214
Encephalitis, Japanese "B"	1		1	
Gonorrhea	23,756		87,930	
Influenza	416		1,799	
Malaria	308	1	1,086	7
Measles	6,965		21,391	
Meningitis, epidemic	244	60	881	217
Paratyphoid fever	179	7	624	31
Pneumonia	15,049		70,109	
Scarlet fever	265	4	927	12
Smallpox	7	0	15	0
Syphilis	22,453		80,690	
Tuberculosis	33,544		110,711	
Typhoid fever	489	57	1,870	240
Typhus fever	165	9	406	29
Whooping cough	3,419		13,633	

NOTE.—The above figures have been adjusted to include delayed and corrected reports.

MEXICO

Mexico-Texas Border—Poliomyelitis.—Under date of May 26 an outbreak of poliomyelitis was reported in Reynosa, State of Tamaulipas, Mexico, with 12 cases and 1 death to that date. The locality is across the Rio Grande from Hidalgo and Cameron Counties, Texas, where an unusual incidence of the disease has recently been reported.

REPORTS OF CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER RECEIVED DURING THE CURRENT WEEK

NOTE.—Except in cases of unusual incidence, only those places are included which had not previously reported any of the above-mentioned diseases, except yellow fever, during recent months. All reports of yellow fever are published currently.

A table showing the accumulated figures for these diseases for the year to date is published in the PUBLIC HEALTH REPORTS for the last Friday in each month.

Cholera

Pakistan—Lahore.—Cholera has been reported in Lahore, City and District, Pakistan, as follows: week ended April 17, 1948, 95 cases with 32 deaths; week ended April 24, 1948, 924 cases with 153 deaths.

Plague

British East Africa—Tanganyika—Singida District.—Information dated May 25, 1948, states that the outbreak of bubonic plague in Singida District, Tanganyika, British East Africa, which commenced early in February, is now regarded as terminated. A total of 262 cases with 147 deaths was recorded during the epidemic period.

India—East Punjab Province—Ambala District.—During the period January 1–May 8, 1948, 178 cases of plague with 58 deaths have been reported in the villages of Ambala District, East Punjab Province, India. This District is stated to be approximately 100 miles north of Delhi.

Smallpox

China—Shanghai.—Smallpox has been reported in Shanghai, China, as follows: Week ended May 8, 1948, 52 cases with 9 deaths; week ended May 15, 1948, 73 cases. During the period January 1–May 15, 1948, 1,970 cases with 488 deaths have been reported in Shanghai.

French West Africa—Ivory Coast.—For the period May 1–10, 1948, 105 cases of smallpox with 30 deaths were reported in Ivory Coast, French West Africa.

India—Calcutta.—Smallpox has been reported in Calcutta, India, as follows: Week ended May 8, 1948, 55 cases with 49 deaths; week ended May 15, 1948, 39 cases with 31 deaths. During the period January 1–May 15, 1948, 6,023 cases with 4,893 deaths were reported in Calcutta.

Sudan (Ango-Egyptian)—Kordofan Province.—An outbreak of smallpox has been reported in Kordofan Province, Anglo-Egyptian Sudan. Reports of cases and deaths have been received as follows: Week ended April 24, 1948, 34 cases with 7 deaths, including 25 cases, 6 deaths in the city of El Obeid; week ended May 1, 45 cases with 11 deaths, including 42 cases, 11 deaths in El Obeid; week ended May 8, 60 cases with 13 deaths, including 55 cases, 13 deaths in El Obeid.

Typhus Fever

Egypt.—During the period April 1–30, 1948, 134 cases of typhus fever with 18 deaths were reported in Egypt.

Japan—Osaka.—During the week ended April 17, 1948, 99 cases of typhus fever were reported in Osaka, Japan.

DEATHS DURING WEEK ENDED MAY 22, 1948

[From the Weekly Mortality Index, issued by the National Office of Vital Statistics]

	Week ended May 22, 1948	Corresponding week, 1947
Data for 93 large cities of the United States:		
Total deaths	8,744	8,923
Median for 3 prior years	8,923	
Total deaths, first 21 weeks of year	206,973	207,368
Deaths under 1 year of age	587	698
Median for 3 prior years	638	
Deaths under 1 year of age, first 21 weeks of year	14,462	16,539
Date from industrial insurance companies:		
Policies in force	71,081,927	67,305,638
Number of death claims	13,486	12,279
Death claims per 1,000 policies in force, annual rate	9.9	9.5
Death claims per 1,000 policies, first 21 weeks of year, annual rate	10.1	10.0