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—Editorial—

Social Services in Tuberculosis Control

In the accompanying paper, "Financial Aid and Case-Work Services to the Tuberculous Patient and Family—San Antonio Plan," Mr. James Zeck describes the special effort made in one city to meet the social problems associated with tuberculosis. The article shows the effectiveness of the close relationships which were developed between the health department and social agencies in San Antonio. Such a combined attack against tuberculosis is an excellent example of the kind of approach which should be taken in tuberculosis control.

We have had years of experience with social work in sanatoria and hospitals. We know that this service is not simply "desirable"; it is necessary. It can help relieve the personal misery of facing tuberculosis day after endless day, and can help the patient and his family cope with the social and emotional problems created by the disease.

But the time to detect many of the problems with which the social worker deals in the sanatorium is not after the patient reaches the institution but at the time he first learns he may have tuberculosis. Early attention to these problems will lessen the patient's resistance both to the diagnosis and to the necessity for accepting and following medical recommendations. This has been brought out very clearly by our experience in the Seattle, Denver, Cleveland, and Washington, D. C., chest X-ray surveys. In all these programs the services of medical social workers were utilized in an effort to determine and meet the social needs of discovered cases immediately upon diagnosis.

In the course of normal tuberculosis control activities, the logical place for the utilization of such services as can be rendered by competent medical social workers would appear to be the chest clinic or the health department itself. In this fashion such services could be made available virtually at the moment the disease is suspected.

Unfortunately, there are still not enough fully trained medical social workers. The assistance which they can furnish both physician and patient is therefore not yet universally available. Community

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social agencies, too, are not always in a position to furnish all the desired services to patients and their families. But it is possible, even under these conditions, to render at least partial service. In every city and county throughout the United States there is some resource, some sort of social agency which can be called upon to support the tuberculosis control effort.

The health officer responsible for tuberculosis control in his area should, as an integral part of his work, develop an understanding and working relationship with the social agencies in his community. Such a relationship would certainly benefit both agencies. The social agency will gain an insight into the specialized medical and public health problems associated with tuberculosis control and the health agency will have an opportunity to see the positive contributions which social workers and social agencies can make toward the effective management of tuberculosis patients.

Without such mutual understanding of each other's objectives, interests, and limitations, and without such cooperation, neither the health agency nor the social agency is capable of rendering maximum service to tuberculosis patients. As a result, the patient himself is perforce obliged to try to bridge the chasm between the two agencies in order to satisfy the physical, emotional, and social needs which his disease brings to light with such personal impact.

This should not and need not be true. The two agencies should work together so closely that urgently needed services become readily available to all patients at the earliest possible moment. To whatever extent this is possible, it deserves full exploration and aggressive effort.

ROBT. J. ANDERSON, *Medical Director,*
Chief, Division of Tuberculosis.

Financial Aid and Case-Work Services to the Tuberculous Patient and Family

—San Antonio Plan—

By JAMES ZECK, M. A.*

This is the story of San Antonio's effort to support its tuberculosis control program by strengthening a weak link, the provision of financial aid to tuberculous persons in need. In the early 1940's when our tuberculosis control activities were broadened and extended, it became clear that the inadequate system of financial protection was a great weakness. The reasons for including financial protection among the objectives of tuberculosis control are obvious and well recognized. The methods by which such protection can be provided are not so well established. Various expedients have been advocated but so far there is no agreement about the most effective way of solving the financial problems of families in which a member has tuberculosis.

This report presents the experience of one community—San Antonio. The writer believes that this project is significant as an example of one method of meeting this need. He does not wish to give the impression that this is the only or the best program which could be developed. It has certain unique aspects because of special factors in the demography of the city.

San Antonio's Tuberculosis Problem

San Antonio, Tex., has been a military center ever since Spanish days. Its 1949 population is believed to be between 350,000 and 400,000. For decades the city has had the highest tuberculosis death rate among the Nation's cities of 100,000 or more population. While the rate has dropped markedly in the past 5 years, San Antonio's relative position among the large cities appears to be the same as in the past.

Until 25 or 30 years ago, San Antonio, "where the sunshine spends the winter," was one of the places to which the Nation's doctors sent their tuberculous patients. O. Henry's "Fog in Santone" is a bitter story about health seekers in San Antonio.

Sidney Lanier was also one of San Antonio's health seekers. He

*Director, City-County Tuberculosis Control Board, San Antonio, Tex. This paper is a more detailed account of the San Antonio plan which Mr. Zeck described at the 1949 meeting of the National Tuberculosis Association. The speech given at that meeting will be published in the 1949 Transactions of the National Tuberculosis Association.

wrote in 1873 that "one of the recognized 'institutions' of the town is the consumptives, who are sent here from remote parts of the United States and from Europe, and who may be seen on fine days in various stages of decrepitude, strolling about the streets" (1).

So strongly has the old condition of things imbedded itself in people's minds that in spite of recent statistics to the contrary, some of the people of the community, including some local doctors, continue to insist that tuberculosis is a problem caused by people who come into the city with the disease, and that much of it is of local origin. That attitude creates a callousness to the sick who are said not to "belong" in our community. Sometimes it almost seems that a person must be an "old settler" to be considered a legal resident for the purpose of admittance to our State and county sanatoria. The attitude is reflected in State laws which close sanatorium doors to persons who may have lived in the Nation or the State all but the first few days of their lives, but, as our State law puts it, are not "citizens of Texas."

Comments on this point have been made as follows: "... In 1940, 312 deaths from pulmonary tuberculosis occurred in San Antonio. However, when the number of deaths among nonresidents is subtracted from 312 and the number of San Antonio residents who died of pulmonary tuberculosis elsewhere is added, the total comes to 321." (2).

In his book, *A Century of Medicine in San Antonio*, Dr. Pat Ireland Nixon swings hard at those who use the "inspired vindication" of laying tuberculosis deaths to the outsiders who come to San Antonio too late to recover health, instead of recognizing that the fatalities are principally from "that large unsewered, Trans-San Pedro Creek district which includes our 90,000 Mexicans" (3).

It may also be of interest to note here that in the years 1939-43 the Michigan State Department of Health, in cooperation with the Michigan Beet Growers' Association, had a screening program in San Antonio to stop the importation of tuberculosis and venereal diseases into that State from South Texas. A team of workers from the Michigan State Health Department set up fluoroscopic equipment next door to the official hiring agency in San Antonio. The hiring agency would not contract for the seasonal agricultural labor of a person who could not produce a "clean health" card from the examining unit. Many people who thought themselves well enough to work in the northern fields were found to be tuberculous and were reported to the San Antonio Health Department (4).

The number of deaths from tuberculosis in Bexar County has ranged between 350 and 400 a year for the past several years. Using the accepted standard of 3 beds (not less than $2\frac{1}{2}$) per annual death, the number of available beds should be not less than 875—more properly

1,200—for the hospitalization of tuberculous residents of Bexar County. Until the middle of 1949, the county sanatorium had only about 70 beds. It is expected to have an ultimate capacity of 150 when the new addition is in full use and remodeling of old quarters is completed. It is estimated that from 60 to 75 patients from Bexar County are hospitalized at State sanatoria. The State as a whole has about a fifth of the recommended number of sanatorium beds if the standard is based on the annual number of tuberculosis deaths.

The maximum number of beds available in Bexar County is 225 at any one time in all hospitals exclusive of some veterans facilities and a few beds in sanatoria operated by private organizations. San Antonio's county and city ratio, even with a recent addition to the county sanatorium, is even less favorable than the position of the whole State. Consequently, in San Antonio we are forced to try to create literally hundreds of "one-bed sanatoria" in the tiny one- and two-room shacks that are the homes of families of one to twelve persons.

According to the policy statement of the State Board of Control there is a limitation of 9 months on stay at the State Sanatorium (6 months until a few years ago). The rationale for this policy is that more citizens of the State have an opportunity for sanatorium care. It enables doctors to use the limited number of beds to teach a larger number of patients how to "take the cure" so that they will be able to continue good care on return to their homes. The Hospital Number of the Journal of the American Medical Association, May 7, 1949, lists the 1948 capacity of the State sanatorium at 935 beds, with an average census of 752 and 1,506 admissions during the year. The same publication for August 14, 1948, showed 1947 capacity as 955, average census as 617, and 1947 admissions as 1,343. The 1949 Texas legislature created a new board which assumes charge of the sanatorium and other State hospitals and special schools.

In addition to the shortages in hospital facilities, there has never been more than a fraction of the number of public health nurses needed to follow up tuberculosis patients. With several health conditions worse than those of the average American community, there were one-fourth the number of nurses called for by standards. There is serious understaffing of all other public health activities as well.

These conditions were true when the war came, and they are still true in the main. As hundreds of thousands of men began to flow through the nine military establishments surrounding San Antonio, the armed forces were concerned about the health of their personnel. The United States Public Health Service lent medical help to the city to meet the additional health problems brought to it. A physician from the Tuberculosis Control Division became head of a newly

created tuberculosis control division in the city health department. He learned early that he could send relatively few patients to the sanatoria, and that in many cases he could not even tell the patient to stop working and go to bed at home or to "isolate" himself from the many other members of his family in two or three small rooms. It was futile to tell a man whose family could have no other income than his wages to start taking treatment for tuberculosis. Nurses worked under constant frustration because even the simplest adequate diet for a tuberculous family was impossible, and there was no money for the other essentials.

Not long after arriving in the city in 1944, the Public Health Service physician and the director of the city health department organized a Tuberculosis Council. The Council included representatives from the governing bodies, and from the city and county health departments, the tuberculosis association, social agencies, and others who were particularly concerned about the blot of tuberculosis on the community. This was the initial step in the development of the City-County Tuberculosis Control Board. However, before discussing this agency, some of the additional factors which made it necessary must be presented.

Social Characteristics of the Community

When World War II came, it froze a number of health hazards in the city. A count by the health department showed that more than 10,000 homes within the city limits were not on sewer lines and had only pit toilets. Most of these thousands of homes were not on water lines. Their occupants bought their water from the peddlers' tank trucks at 25 to 40 cents a barrel. The barrels stood outside their houses. Many families of 4 to 10 people lived in 2 or 3 small rooms.

In 1942 the power company of San Antonio wanted to find out why the gas and electric lines they extended into the Latin-American section of the city were not producing expected revenue. They co-operated with the health department in making a social-economic

Table 1. *Representative annual income for low economic groups, by family and individual, for major groups, San Antonio, Texas, 1942*

Group	Typical annual income		Persons per family
	Per family	Per individual	
Latin-American.....	\$622. 34	\$141. 44	4. 4
Negro.....	937. 50	284. 09	3. 3
Anglo-American.....	949. 02	256. 49	3. 7

study in connection with a tuberculosis survey that year. Samples of the three important groups of the community showed that the prevalent annual family incomes were as listed in table 1 (5).

The representative annual family income (\$622) for Latin-Americans was the lowest among the three racial groups. Yet they comprise between 40 and 45 percent of the population. They also have the largest family size (4.4 persons) among the racial groups.

Potential Latin-American customers of the power company had no money with which to buy stoves and electric fixtures, nor to connect to the gas and electric lines.

Table 2 shows the tuberculosis death rates for the three major population groups.

It is clear that in San Antonio the ravages of tuberculosis are inversely proportional to income. At a meeting of the San Antonio Tuberculosis Council in 1946, Dr. R. G. McCorkle, tuberculosis specialist, was asked the cause of the marked reduction in the city's tuberculosis death rate during the war years. He gave almost all the credit to civilian job opportunities at the nine military establishments that surrounded San Antonio, where many Latin-Americans could for the first time earn from \$125 to \$200 a month. This greatly raised their standard of living.

That was the 1942 picture. The 1949 picture differs in only a few respects: war-fostered higher family incomes and the unique health and social agency—the City-County Tuberculosis Control Board.

In most States, public assistance is provided under the Social Security Act (Aid to Dependent Children, Old Age Assistance and Aid to the Blind), and by general assistance. The three special programs are supported by a combination of Federal and State funds. General assistance to those not eligible for the three categories is provided by State and local funds only.

It must be recognized that within each of these three categories there are various eligibility restrictions so that not all the children,

Table 2. *Tuberculosis deaths per 100,000 population, San Antonio, Texas, selected years*

Group	Year		
	1939	1941	1944
Latin-American.....	246	229	143
Negro.....	80	105	88
Anglo-American.....	55	62	46

aged, or blind get assistance through Social Security funds. Those not eligible within these categories plus all of the many who are neither children, aged, nor blind must look to general assistance funds for help.

Resources in Texas for meeting the financial needs of tuberculous or other families were very meager in 1942. The State Department of Public Welfare administers categorical assistance over the entire State, and Texas law places responsibility for general assistance upon the counties. But the law also limited the amount of taxation for all purposes, and Bexar County had no special tax funds for aid to families and individuals not eligible for the categorical assistance. There is no planned program of general assistance to which needy persons can turn for help.

However, Bexar County has accepted the responsibility for health and welfare to the extent of providing office space in the Court House to several private social agencies, and making monthly grants to various welfare agencies and institutions.¹ It also operates a home for the aged, and county correctional schools for boys and girls. It participates in the operation of the city-county hospital and, since the establishment of the Tuberculosis Control Board, budgets funds for this city-county agency.

The lack of public general assistance imposed an impossible burden on the private agencies and was the primary reason for setting up the special agency for relief to the tuberculous, in effect, a fourth category of assistance to a special group.

The private social agencies supported by the Community Chest were so overloaded by the relief demands upon them that they periodically had to refuse to take new applications. A tuberculous family might have to wait for months until enough recipients were removed from the case load so that case workers could reach the applicants on the waiting list. When a family did get financial aid, the budgetary limitations of the agencies made it necessary to spread relief thin and assistance was less than adequate for absolute necessities.

The drain on the existing social agencies for relief to tuberculous families, together with the information supplied by the Public Health Service physician, led to the appointment of a committee by the Community Chest to study ways and means to improve the situation. They learned that a substantial part of the expenditures of the family agencies financed by the Community Chest was going as relief to tuberculous families and that other proper activities of the case work agencies were suffering consequently. The committee recognized

¹ San Antonio Social Welfare Bureau, \$100; San Antonio Association for the Blind, \$75; Children's Service Bureau, \$100; Protestant Orphan's Home, \$100; Home of the Good Shepherd, \$25; Saints Peter and Paul Orphanage, \$25; St. Joseph's Nursing Home, \$25; Ella Austin Orphanage, \$25.

that without adequate financial aid much of the tuberculosis control program would be nullified. If there had been a local department of welfare with legal authority to administer funds for general relief, the problems could have been met without an entirely new special program. But since this did not exist, it was necessary to consider other methods. New legislation was required.

A committee of citizens, including a number of those who had made the study for the Chest, was organized and was offered the help of the Chest and the Community Welfare Council (Council of Social Agencies). The new committee gathered its facts and approached the public officials to set up a program to provide financial aid to the tuberculous families who needed it. Neither the county nor the city had funds for such a purpose. But they had no objection to the passage of State legislation that would make it possible for a county and its cities to levy taxes for financial relief to needy tuberculous persons and their families, and to organize a joint program for that purpose.

An attorney who was interested in this problem studied existing laws and prepared a bill for introduction in the 1945 session of the Texas legislature. It was presented only a month before adjournment, but intensive work by the citizens' committee bore fruit. When the bill came to vote, it was passed with no opposing votes in the Senate and only one "no" in the House.

The new act ² permitted organization of a city-county tuberculosis control board in any county with a population of 200,000 or more. If the voters of the county and any constituent city or cities approved it in an election, the county and cities could levy taxes which would be used for needed financial aid to "persons suffering from tuberculosis (who had lived in the county not less than 6 months on date of application) and to dependent members of their immediate families," and for administrative costs. This tuberculosis control board could co-operate with any public or voluntary organization "in order to alleviate, suppress and prevent the spread of tuberculosis within the county, as a public health function."

Except for staggered initial terms, the members of such a board would be appointed for 3-year overlapping terms. There would be no fewer than five members, and there could be more, depending on how many cities within the county participated. One member each would be appointed by the county commissioners' court and by the mayors of the participating cities. The county board of health and the board of health of the largest city within the county would also each appoint one member. The last member would be appointed by a panel of district court judges.

² Senate Bill No. 399, 1945 Session. This amends certain sections of chapter 219, Acts of 1927, Regular Session, and adds the new section 6-A which permits creation of the city-county tuberculosis control boards.

Under the act the funds raised by the county and its participating cities would be pooled, and the tuberculosis control board would report quarterly to the taxing jurisdictions on the use of the pooled fund. The county could levy up to 10 cents on each \$100 of assessed property valuation and each city up to 5 cents on each \$100 valuation.

A mass meeting was held before the bill was introduced in the legislature, and the graphic pamphlet "Like a Sore Thumb" (6) was used effectively. This pamphlet was published in February 1945. Its charts, line drawings, and pictographs in black and red dramatized the problem of tuberculosis in San Antonio. The material was taken largely from the records of the San Antonio Health Department and various welfare agencies. An advertising firm assisted in printing and distributing the booklet which was financed by the Bexar County Tuberculosis Association. It described tuberculosis in San Antonio in striking detail through the presentation of some of the following facts: that tuberculosis was the third most common cause of death in San Antonio in 1944 (a good year!); that at least 61 percent of the tuberculous population were long-time residents of the community (and incidentally that a number of San Antonians had died of tuberculosis elsewhere). The pamphlet pointed out the need for early case finding, isolation, adequate medical treatment and rehabilitation, and finally stressed the economic problems.

After the bill became law, a second mass meeting was called to plan for the special election that would be called. This election—to give the voters an opportunity to vote authorization to the taxing bodies to make the proposed levies—was called for July 25, 1945. A committee was organized by the Community Welfare Council to telephone and urge people to vote on the proposition. A call was sent out for volunteers, each to telephone 50 persons in the telephone directory, and 800 persons agreed. Private subscriptions totaling over \$8,000 were used to place a series of advertisements in the daily newspapers and four weeklies, and for radio time. In the 10-day period, starting July 16 and ending on election day, five radio stations carried twelve 15-minute evening talks and 536 spot announcements of 50 to 100 words, day and evening.

This example of community action is a thrilling story in itself. Although it had been predicted that the voters would defeat the measure, it actually was carried two to one, even though the vote was light.

In accordance with the State law, the Board was appointed in August 1945 and the persons most active in the campaign became members. These included the Community Welfare Council board member, who had been chairman of the citizens' committee, the attorney who had drafted the State law, the businessman who had raised the campaign fund through private subscriptions, the president of the Taxpayers'

Defense League, a leading tuberculosis specialist, and a woman who had been active in many civic undertakings.

The new Board met with the county and city officials to ask for appropriations so that the work could begin immediately. The county declined to appropriate funds until 1946, when collections of taxes would have brought in the first amount especially budgeted for tuberculosis control. However, the city of San Antonio arranged for borrowing against the tax collections, and the first funds became available late in October. The private social agencies prepared their case histories for transfer to the new agency, and the first assistance checks were sent out November 1, 1945.

The Philosophy of the New Agency

The development of the agency introduced a new concept in public welfare and public health. Basic to all public assistance is the concept that all persons of any race, creed, or color regardless of the reason for need have a right to the necessities of life. Existing categories under the present Social Security Act and general assistance have some health implications. In the blind program obviously, and in the other two (Aid to Dependent Children and Old-Age Assistance) the chief cause of dependency is often physical disability of the breadwinner. But probably never before has public relief been used as a health measure to buttress a program of tuberculosis control. In its earliest meetings, after its organization in August 1945, and before financial aid had begun, the new Board declared its program to be one of promoting the public health.

This emphasis on the public-health nature of the agency, with financial assistance considered as a means to that end, makes a great deal of difference to the clients. Case workers attempt from the first interview to implant and nourish the understanding that this is a community service, like public schools, available to all eligible persons who need it and will use it for the purposes intended. Once patients perceive that the financial assistance is in the nature of wage-replacement which the community provides to make it possible for them to settle down to the job of getting well, their attitude toward treatment and the assistance becomes healthier. There is less sensitivity in accepting such temporary aid.

Since tuberculosis is frequently associated with lack of income sufficient to buy food, housing, clothing, early medical care, and the educational advantages with which to make maximum use of whatever income one does have, there are numerous instances when it is necessary to do more than replace the income that tuberculosis stopped. If we merely replace an inadequate former income, we may be doing nothing to restore the health of the sick person or to build

up the resistance of the other members of the family to the tubercle bacillus. It is often necessary to raise the standard of living above the previous dirt-floor level.

The Board is convinced that the financial assistance will show its best results only if it is part of a good social case-work program. It decided early that the director of the new City-County Tuberculosis Control Board should be a well-qualified social worker. The associate secretary of the Community Welfare Council acted in this capacity temporarily until January 1946 when the full-time director was employed. Other qualified social case workers were not available for positions in the agency then and several were borrowed for 1 and 2 months from the Family Welfare Association until the board could build up its own staff. There is freedom to employ the best-trained case workers available without regard to State or local residence, and the size of the case loads is consistent with good case-work service. Case-work services, as well as financial assistance, were accepted as the responsibility of the staff in accordance with the increasing awareness of the social implications of illness. The recognition of a need for professional social service of high quality is a further indication of the advanced thinking and sound planning of the Board's founders.

Policies and Procedures

The Board determined before the first assistance was given that inadequate aid would be wasteful. Unless enough was provided to buy sufficient food and other essentials, any amount spent would only prolong misery and produce no benefits. The Board stated its program was one of public health with public assistance a part of the health program.

With the Mexican dietary habits of the largest group of patients in mind, the Public Health Service physician heading the tuberculosis division of the health department modified the quantity charts of Family Food Plans for Good Nutrition (7) to increase the amount of certain protective foods. This chart was modified to provide for differential quantities according to sex, age, degree of physical activity of well members, "forced feeding" of badly underweight patients, pregnant women or nursing mothers.

The nutrition consultant from the State department of health agreed to take this quantity chart and arrive at average costs in San Antonio. She visited 33 markets, mainly the smaller ones in the areas where the largest numbers of patients live, and submitted weighted average costs for every classification in the chart. These resulted in proposed increases of from 5 to 40 percent (depending on family composition) in the food allowances taken over at the beginning from financially embarrassed private agencies. The new schedule was adopted by the Board without modification, with several Board

members reiterating an earlier determination to provide adequately for essentials. Two later studies resulted in the adoption of still higher allowances as food costs rose. The State Health Department has not had a nutrition consultant on its staff for well over a year, but periodic reviews of food costs are planned as other competent persons are found by the Tuberculosis Control Board. Food allowances are increased for special diets ordered by clinics.

Allowances in the family budgets for house payments and rent are made on an actual cost basis. Since decent and sanitary housing is a "must," and the large proportion of tuberculous persons live in the cheapest and worst housing, the agency encourages its clients to improve their housing and assures them of willingness to make reasonable increases in rent allowances when it is possible to find better quarters. When taxes come due on homes owned or being bought by clients, special allowances are made for payment. This avoids jeopardizing a family's security, and promotes the patient's peace of mind.

Items for utilities, transportation, limited amounts of life insurance, and household and some personal expenses are included in computing monthly budgets. Periodic allowances, consistent with the region's climatic requirements, are made for purchase of clothing. To make certain that hygienic and healthier living will be possible, funds are provided for necessary beds and bedding, and for other indispensable household equipment.

Remembering that the means for healthful living is an absolute requisite in the care of patient and family, the Board has authorized provision of funds to meet such essential needs, but with not a whit of extravagance. It feels keenly its responsibility to the citizens of the community who must support the program through the taxes they pay. In computing how much cash assistance the family group shall receive from the agency, the cost of the allowable items for a month is totaled. From this total, the sum of monthly incomes and resources is subtracted. Checks for the difference are sent once or twice a month, depending on the amount of the deficit and the circumstances of the case.

When a parent becomes ill, some working children may at first resent the possibility of having to contribute all, or a substantial part, of their earnings to the family. The agency expects working children to pay their own way and to assume some family responsibility if they earn enough to do so. But it also believes that the long-range good of the children, the family, and the community is best served if children keep part of their earnings so they can do what others of the same age and economic status are doing. Our experience has shown that most young people will assume their full share of responsibility if they are handled

with patience and with sympathetic understanding of their own personal needs as well as the family's.

The agency never requires children to leave school and take jobs in order to support their families. However, if of their own volition and against advice they stop school attendance at legal age or beyond, they are expected to support themselves.

Often the problem is not the out-of-school child who will not work, but the proud family which would put a child to work at the earliest legal age, 14, rather than accept the financial assistance of a social agency. In one such instance the parents would have taken their daughter out of the eleventh grade. If they had done so, her earnings as a kitchen helper, or other unskilled worker, could hardly have exceeded \$60 a month. Another year in high school while the agency supplemented the family income made it possible for her to complete her commercial course and to take an office position at \$120—soon raised to \$135. She was able to assume the family's financial deficit formerly supplied by the agency, and has been doing so the past year and a half, for her father has not yet recovered. The temporary additional expenditure while the daughter completed high school has saved the taxpayers' money, has put the girl on a higher competitive level for jobs, and has made the family financially independent at a much earlier date.

The agency is able to continue supplementary financial assistance until the ex-patient is able to work full time, or—if he needs vocational retraining—through the period of retraining and until medical opinion permits full-time work, or until part-time earnings are sufficient to cover needs.

An unmarried woman who had been "on the cure" in a rented room for 4 years, after completing the maximum 9 month's hospitalization permitted at the State sanatorium, was finally ready for vocational retraining. She had left high school upon completing tenth grade and had supported herself first as a waitress and then as a civilian mechanic's helper at an Army air field until she broke down with tuberculosis. Return to her former work would have invited a relapse. However, her tests at the vocational rehabilitation office disclosed aptitude for office work. The agency continued financial assistance during the year she spent in business college, while the vocational rehabilitation organization paid her tuition and provided money for incidental expenses. She was placed in her first office job at \$125 a month, and reports in the 8 months since that she is happy in the new kind of work and that she has already had a raise. The new occupation reduces her chance of relapse.

Experience everywhere has shown that a certain proportion of patients will not isolate themselves for the protection of family and

community, and will not follow medical advice on rest and treatment. Good social case work and medical and nursing guidance helps the majority of them adjust to the necessity of modifying life-long habits. In some instances, however, it is necessary to exercise authority in dealing with the few whose activities fail to promote the public health.

Coordination of Agency Program With Other Community Services

By resolution, after agreement with the County Medical Society, the agency accepts medical certification of tuberculosis only from the City Chest Clinic which accepts patients from the whole county. Physicians who wish to refer their patients to the agency for financial assistance first release them to the clinic.

The State Department of Public Welfare limits Aid to Dependent Children to \$27 for the first eligible child, \$18 for every additional child, and a ceiling of \$81 per month to any family of children. The Tuberculosis Control Board supplements the ADC in most families in which there is tuberculosis. This brings the income up to the Control Board's budget. By agreement with the local office to the State Department of Public Welfare, case-work services to families in which both agencies provide assistance is given by the Tuberculosis Control Board. SDPW field workers naturally retain all responsibility for determining eligibility for State aid, and make the home visits needed to establish it.

The City-County Tuberculosis Control Board cooperates with the City Chest Clinic and with the nursing and other divisions of the city and county health departments. It also works with the county tuberculosis association, which—by long-established practice—processes applications to county and State sanatoria for the county judge, who is charged with the responsibility by State law. The ways in which the nutrition consultant of the State health department is used have been described.

The homemaking teachers of the school system have agreed to give guidance in food management and other aspects of homemaking to selected families who ask for help. Certain settlement houses provide the usual settlement activities for members of agency families. One of them has sewing classes which may be joined by the agency women along with the other women of the neighborhood.

As already indicated, both diagnosis and out-patient treatment of tuberculosis are available at the City Chest Clinic. Treatment for conditions other than tuberculosis is not so simple. The tax-supported general hospital, with its out-patient clinics, is gradually reopening after having been shut down almost completely for nearly 2 years because of financial difficulties. During that period two private hospitals and their out-patient clinics did what they could to care for the increased "free-care" patient load. But both ruled that they could

not accept tuberculous persons in their general clinics. Furthermore, the county physician would not knowingly make or send his assistants to make emergency home visits to tuberculous patients. On the other hand, the Tuberculosis Control Board decided that it could not establish the precedent of paying for private medical care for its clients when the community pattern was to provide care to those who could not pay for it in the tax-supported hospital, with the other two larger hospitals of the community taking the overflow. Its board members added their influence to that of other citizens to reopen the public facilities.

As has been indicated, the Tuberculosis Control Board works cooperatively with the Vocational Rehabilitation Office in retraining patients. It also cooperates with the other agencies of the community, both public and private. Being a health and social agency, it subscribes to and uses the Central Index (Social Service Exchange). It also has membership in both the health and family divisions of the Community Welfare Council (Council of Social Agencies).

Social Problems and Social Work Needs

There are three State sanatoria for the tuberculous. An additional institution, recently vacated when Negro patients were moved into the new State sanatorium for Negroes in the northeastern part of the State, is being filled with tuberculous women from the State hospitals for the mentally ill.

The Texas State Sanatorium, near San Angelo, the first and largest in the State, accepts only minimal and certain moderately advanced cases of tuberculosis. It limits their stay to 9 months, regardless of the condition or progress of the patient at the end of that period. Noncitizens may not be admitted. At the Bexar County Sanatorium, on the other hand, aliens may be admitted if someone pays the institution the full cost of their care. Neither pneumothorax nor any form of surgery is performed at the county sanatorium.

Inadequate treatment facilities lead to the ridiculous but grim situation where the patient—alien or citizen—with moderately advanced or far advanced tuberculosis, in need of pneumothorax, cannot be admitted to a public sanatorium, but must try to rest in his crowded shack and travel by bus to and from the City Chest Clinic for refills. Sometimes he has to walk as far as a mile between his home and the bus line. Then he has several hours' bus travel to and fro, and the necessary wait for his turn at the clinic. It is obvious that with only one bed for every four needed, and with regulations and other conditions that make it impossible for some patients to use even the beds available, the great majority must take their treatment at home.

It is difficult to create hundreds of one-bed and two-bed sanatoria in the county and city and make them halfway acceptable when the continuing housing shortage usually makes it impossible to provide a separate room for the patient.

None of the State's tuberculosis sanatoria, including the main one of over 900 beds, has a medical or any other kind of social worker on its staff to help patients with their personal or family problems. Of the county sanatoria, only two have provided in their plans for the part-time services of a medical social worker. The executive secretary of the county tuberculosis association also visits the sanatorium frequently and provides various services to the patients. The Bexar County Sanatorium has no provision for social service, but the need is met in part when case workers from the Tuberculosis Control Board periodically visit patients from the families known to the agency. When others request service at the same time, the agency is prepared to provide it. Patients want to talk over the problems of their families in town, and the things that worry them.

"The furniture company was sending letters to my wife about the balance we owe, but now they have sent two telegrams, and she is scared." The case worker calls the store, explains the situation, and secures postponement of payment of the balance until the man can return to work. Or one patient says a neighbor told him on a visit to the sanatorium that his wife is "running around" with a former boy friend. He cannot rest because he wonders whether it is true, and if so, what he should do. The case worker calls on the wife in town, learns the story is true, and that the wife plans to get a divorce and marry the other man. A meeting of husband and wife is arranged so that they can talk it over, and the husband is gradually helped to adjust to the inevitable divorce, and to resume his "rest cure."

The mother in the sanatorium may be upset because her husband, who works an evening shift, has told her that Mary, age 15, came home after midnight several times, and the school reports a number of absences. Mary is asked to come to the agency office after school. The case worker discusses her interests and finds that the girl would welcome referral to the vocational counselor, because she sees no use in "taking these courses that don't mean anything to me." She begins to understand why her mother is worried about her late hours and the company she keeps. There are lapses, but Mary gradually finds her way, both in school and out of it.

In some cases it takes no more than some manipulation of the environment, such as arranging medical care for daughter Guadalupe, to make it possible for the patient to rest better in the sanatorium. Even the limited experience of the Tuberculosis Control Board in providing case-work service to patients in the county sanatorium

leads to the conviction that good social service in every sanatorium would greatly reduce the number of departures without medical consent. It would also promote benefits from treatment.

The necessity for home treatment intensifies some of the problems of the tuberculous and their families. A short illness of a member of a family may solidify the group, but the long-continued presence of the tuberculous person in a badly overcrowded home which must double as a hospital often becomes a trial to the well members. It is not easy for those who are not themselves sick to try to observe hospital rules 16 to 24 hours a day. For the patient it is equally trying. Attempting to follow a rigid rest schedule when nobody else in the home is doing so requires a brand of application that is possessed by very few—especially when they do not even have a separate room from which to shut out the home activities and distractions.*

It is hard for children to understand why dad or mother will not pick them up now or caress them as they used to. And it is not easy for the sick parent to be firm about keeping the children away, and yet to do it in such a way that the youngsters will know they are still loved. These complications of home treatment may seem trivial to those who have not had to work with the problems, but their cumulative effect on patient and family are disrupting, to say the least. Social case work can help patient and family to understand themselves and to smooth the harder road of "home care."

One aspect, in particular, of the work in San Antonio diverges from desirable practice. Patients are given instruction in isolation techniques at the City Chest Clinic after they have been given the diagnosis by the doctor. But many have not really heard what the nurse said because they were thinking of the implications of the diagnosis they had just received from the doctor. It would be desirable for a public health nurse to visit the patient at home within a few days after diagnosis, and then make several more visits at short intervals to teach by repetition. Other members can also be told what the patient has heard, and the nurse can teach in the home setting, taking into account what the patient and family have to work with, and under what conditions they will have to make their adaptations. Unfortunately, the extreme shortage of nurses in the city health department means that many newly diagnosed patients are not visited by a nurse in their homes until months have gone by. Since the financial aid given to families by the Tuberculosis Control Board is for the promotion of public health, the case workers from the agency must remind the patients and the families about the clinic instructions in regard to rest and isolation. It would be far more desirable if this were done by nurses, who would be better equipped to do it. But the Board of the agency feels that the financial invest-

ment in families must be protected even if its case workers are not the logical ones to do the teaching.

Considering the handicaps of housing, sanitation, hospitalization, and medical care under which tuberculous patients of the community are placed, it is a wonder that so many do recover their health. There is every reason to believe that a much higher proportion would recover in less time and with a much smaller total outlay of money if case finding, hospital beds, and clinic and nursing facilities were increased several fold.

Social and Financial Services

During the calendar year 1948 the City-County Tuberculosis Control Board served 726 families and unattached single individuals (households, or "cases") in whose families tuberculosis either created or accentuated a problem. The specific services given were:

<i>Type of Service</i>	<i>Cases</i>	<i>Remarks</i>
Total.....	726	Case is defined as families or unattached single individuals.
Financial aid to cases.....	415	Aid offered for varying lengths of time. Average monthly load 244.
Case work only.....	178	No financial aid indicated.
Rejected or ineligible applications.	133	Investigation indicated case was not eligible or functions of agency did not offer type of service needed.

During the first 8 months, referrals were at an average of 29 per month, with a high of 43 in March. In the last 4 months of the year, they averaged only 17. It is believed that this great difference is due to two causes. A slight increase in case finding in the earlier months was followed by a marked slump in case-finding activities because of the withdrawal of the full-time director of the city health department's division of tuberculosis control in the latter months.

There were 300 referrals of newly diagnosed persons during the year. While every patient diagnosed at the clinic receives a referral to the agency, it is believed that in some instances neither the patient nor a member of the family comes to the office, and that the number of new diagnoses is higher than the number interviewed by the agency. It would be useful to discover whether those who did not "follow-through" were in no need of financial assistance or whether other causes prevented their applications.

Of special interest is the group of 178 who received case-work service only. This is a large number, amounting to one-fourth of the total load and almost a third as great as those who received financial assistance. This service was given to persons who were faced with making personal and family adjustments of many kinds including:

1. Families who needed help in placing children so that mothers could go to a sanatorium. With a dearth of child care facilities in the community added to the agency's own policy limitations, its case-

workers either found a relative's home, or referred families to agencies which could arrange temporary placement in an orphanage. Aside from the necessity of finding adequate homes for the children, the case workers dealt carefully with the occasionally expressed and sometimes concealed fear of mothers that their children's affections would turn toward the substitute mother.

2. Sanatoria patients from Bexar County, not previously known to the agency, who asked the case workers who were visiting other patients for help. They were worried about their families, their incomes, and particularly their children. Mothers worried about the possible loss of the child's affections.

3. Patients who suffered from a wide variety of marital problems—lack of mutual understanding, resentment, jealousy, incompatibility, infidelity, and all the other problems of marital discord aggravated by serious illness.

4. Patients who did not require financial aid from the agency but who needed help in budgeting and using their own resources so that they could remain independent.

In 1948, the financial assistance to families and individuals and the cost of providing case-work service to recipients and nonrecipients of aid, plus all administrative costs, amounted to \$173,709.56. If the case-finding activities of the community were stepped up, present finances of the agency would be insufficient. But there is confidence that as the need is demonstrated by an influx of applications, the communities would be convinced that more funds must be provided. The Tuberculosis Control Board spends more money than any other social agency in the community except the State Department of Public Welfare and the local chapter of the American Red Cross. The former disburses the three assistance categories of Old Age Assistance, Aid to Dependent Children, and Aid to the Blind, while the latter serves a highly concentrated military area. The budget standard used for computing allowances to patients and families is the highest in the community.

As we have already pointed out, this method of categorical assistance is not the only way, or necessarily the best way, to provide financial assistance to the tuberculous and their families. In San Antonio it seemed wise to set up a special plan of assistance for the tuberculous rather than to aim toward a general assistance program for all the needy. It was felt that the community would understand the needs of the tuberculous more clearly and would provide more adequately for them. If the useful precedents, objectives, and standards which were established can be transferred without loss to a general public welfare department, and if improvements continue, the possible gains of such a move could add to the welfare of all. The needs and special problems of the tuberculous can be satisfied through a sufficiently broad program of public welfare, but the same

high standard of assistance must be maintained or the tuberculosis control program of San Antonio will be seriously impaired.

The City-County Tuberculosis Board, staffed by social workers, has, since November 1945, been alleviating some of the suffering experienced by these patients. The work of the City-County Tuberculosis Control Board cannot be done in a vacuum. It cannot achieve its maximum effectiveness unless the other phases of tuberculosis control are strengthened. The Board cannot and does not interfere with other agencies, but it does urge the development of those activities that must be improved if tuberculosis control in the community—and its own dovetailed part of it—is to advance. By conference, through letters, and in quarterly reports, it points out needs and problems. In some instances, its activities seem to have stimulated other phases of a control program.

Summary

This is what has happened, and is happening, in San Antonio. In 1944 and 1945 a public-spirited group of citizens and professional people, possessed of breadth of vision and understanding, successfully campaigned for the establishment of a new agency to meet the grave social problems faced by the tuberculous population. Spurred on by inadequacies in the local community resources, hoping to achieve a broad program of social and economic protection against tuberculosis, and building on sound basic concepts of public health and public welfare, they laid the foundations for a program of financial assistance designed to render aid and to help control tuberculosis.

Their hopes and their plans are slowly being translated into reality. Progress has been made in these 4 years. There has been constant improvement in the program and we are proud of our successes, but we are also keenly aware of our difficulties and our inadequacies. We know that we still have a long road ahead until we achieve our ultimate goal—a program of social and economic protection which will lift the tragic burden from the sick people of San Antonio and help rid our city of tuberculosis.

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Characteristics of Commercial X-ray Screens and Films—X

By WILLARD W. VAN ALLEN, B. Sc.*

This is the tenth in a series of reports on the characteristics of commercial X-ray film-screen-developer combinations. The following tables represent the accumulated and revised findings of the Electronics Laboratory to date. An earlier report in this journal¹ described the technical details of this investigation.

Table 1. *Speed of fluoroscopic screen-film-developer combinations*^{1,2}

Films and developer	Development time ³ (min.)	Screens								
		D sample 1	D sample 2	D sample 3	666D sample 1	666D sample 2	E-2	B sample 1	B sample 2	B-2
Anso Fluorapid:										
Anso Liquadol.....	4	105	125	140	75	100	-----	-----	-----	-----
Buck X-ray.....	8	115	125	140	75	100	-----	-----	-----	-----
DuPont Liquid.....	5	115	120	130	75	95	-----	-----	-----	-----
Eastman Liquid.....	8	90	95	105	65	75	-----	-----	-----	-----
Eastman Rapid.....	8	135	145	165	85	110	-----	-----	-----	-----
Eastman X-ray.....	8	120	150	155	100	125	-----	-----	-----	-----
G. E. Supermix.....	8	155	170	200	100	130	-----	-----	-----	-----
DuPont Blue Fluorofilm										
No. 560 ⁴ : Dupont Liquid.....	5	-----	-----	-----	-----	-----	-----	-----	-----	-----
DuPont Green Fluorofilm										
No. 562: DuPont Liquid.....	5	-----	-----	-----	-----	-----	130	55	65	85
Eastman Blue Photofluore:										
Anso Liquadol.....	4	85	105	115	65	85	-----	-----	-----	-----
Buck X-ray.....	8	140	150	175	90	115	-----	-----	-----	-----
DuPont Liquid.....	5	110	115	125	70	85	-----	-----	-----	-----
Eastman Liquid.....	8	160	165	195	100	130	-----	-----	-----	-----
Eastman Rapid.....	8	105	110	130	75	90	-----	-----	-----	-----
Eastman X-ray.....	8	95	115	130	75	100	-----	-----	-----	-----
G. E. Supermix.....	8	110	120	145	75	95	-----	-----	-----	-----
Eastman Green Photofluore:										
Anso Liquadol.....	4	-----	-----	-----	-----	-----	120	55	5 ^c	85
Buck X-ray.....	8	-----	-----	-----	-----	-----	110	50	55	75
DuPont Liquid.....	5	-----	-----	-----	-----	-----	120	50	60	85
Eastman Liquid.....	7	-----	-----	-----	-----	-----	135	60	65	90
Eastman Rapid.....	7	-----	-----	-----	-----	-----	115	55	55	80
Eastman X-ray.....	8	-----	-----	-----	-----	-----	140	60	70	95
G. E. Supermix.....	8	-----	-----	-----	-----	-----	155	75	75	110

¹ Speeds are determined with film and screen in direct contact and therefore do not represent the over-all speed of the same combinations when used in a photofluorograph.

² Subsequent reports will contain data on additional developers.

³ As per directions on the label of the developer package. All development at 68° F.

⁴ DuPont Blue Fluorofilm No. 560 is a new, improved film recently released by the manufacturer; it is not the same as the DuPont Fluorofilm listed in previous reports. All data given in previous reports for this film are therefore obsolete, and new data will be furnished later.

* Physicist, Electronics Laboratory, Rockville, Md., Division of Tuberculosis, Public Health Service.

¹ Pub. Health Rep. 64: 581 (1949). For a complete discussion of the sensitometry of X-ray materials, see The Sensitometry of Roentgenographic Films and Screens by Morgan and Van Allen, Radiology, June 1949.

Table 2. *Speed of intensifying screen-film-developer combinations*¹

Films and developer	Development time ² (min.)	Screens								
		Buck			Eastman			Patterson		
		Xtra speed	Mid speed	Definition	Ultra speed	Fine grain	Definition	High speed	Par speed	Detail
Anso High Speed:										
Anso Liquadol.....	3	70	60	50	110	85	60	115	60	20
Buck X-ray.....	3	65	50	45	100	75	50	100	55	20
DuPont Liquid.....	3	50	45	40	70	55	45	75	45	15
Eastman Liquid.....	3	50	45	40	85	60	45	85	45	15
Eastman Rapid.....	3	65	55	45	100	75	55	100	55	20
G. E. Supermix.....	3	75	60	50	110	85	60	115	65	20
DuPont No. 508:³										
Eastman Blue Brand:										
Anso Liquadol.....	3	90	75	65	145	110	75	130	80	25
Buck X-ray.....	3	85	70	60	140	105	70	130	80	25
DuPont Liquid.....	3	80	70	60	130	100	70	115	70	25
Eastman Liquid.....	3	85	75	65	135	105	75	125	75	25
Eastman Rapid.....	3	75	65	55	120	90	65	105	60	25
Eastman X-ray.....	4½	85	70	60	140	110	80	120	90	25
G. E. Supermix.....	3	90	75	65	145	105	75	135	80	25

¹ Subsequent reports will contain data on additional developers.² As per directions on the label of the developer package.³ DuPont No. 508, now on the market, is reported to be a new, improved product which is not the same as DuPont No. 508 listed in previous reports. All data in previous reports for this film are therefore obsolete, and new data will be furnished later.Table 3. *Average value of fog and contrast (gamma)*¹

Film	Fog densities—Developer ²						
	Anso Liquadol	Buck X-ray	DuPont Liquid	Eastman Liquid	Eastman Rapid	Eastman X-ray	G. E. Supermix
Photofluorographic:							
Anso Fluorapid.....	0.09	0.25	0.12	0.23	0.12	0.08	0.23
DuPont Blue Fluorofilm No. 560 ³			.04				
DuPont Green Fluorofilm No. 562.....			.10				
Eastman Blue Photofluore.....	.04	.15	.08	.07	.05	.07	.09
Eastman Green Photofluore.....	.11	.26	.13	.15	.09	.10	.28
Roentgenographic:							
Anso High Speed.....	.10	.07	.10	.11	.04		.10
DuPont No. 508 ⁴							
Eastman Blue Brand.....	.08	.07	.10	.08	.05	.06	.06
Film	Contrast (gamma)—Developer ²						
	Anso Liquadol	Buck X-ray	DuPont Liquid	Eastman Liquid	Eastman Rapid	Eastman X-ray	G. E. Supermix
Photofluorographic:							
Anso Fluorapid.....	1.8	1.9	2.2	1.7	2.0	2.1	2.1
DuPont Blue Fluorofilm No. 560 ³			1.9				
DuPont Green Fluorofilm No. 562.....			2.2				
Eastman Blue Photofluore.....	1.8	1.8	1.7	2.0	1.7	1.8	1.9
Eastman Green Photofluore.....	2.1	2.4	2.0	2.3	2.2	2.0	2.3
Roentgenographic:							
Anso High Speed.....	2.8	2.3	2.1	2.6	2.3		2.8
DuPont No. 508 ⁴							
Eastman Blue Brand.....	3.0	2.9	2.7	3.0	3.2	2.8	

¹ Values obtained with open-tank development and continuous mechanical agitation at 68° F. Values for fog densities obtained in open tank without agitation have been found generally lower.² Development time as given in tables 1 and 2.³ See footnote 4, table 1.⁴ See footnote 3, table 2.

An Evaluation of the Histoplasmin Reaction in the Detection of Naturally Occurring Histoplasmosis in Dogs

By JOHN A. PRIOR, M. D., CLARENCE R. COLE, D. V. M., PH. D., and VIRGINIA TORBET, M. S.*

In the search for the source of *Histoplasma capsulatum*, the fungus which causes histoplasmosis, many avenues have been explored. It is known that sensitivity to histoplasmin follows a definite geographic pattern of distribution, being highest in the midwestern part of the United States.

It is also known that animals, as well as human beings, are susceptible to histoplasmosis. In 1939, DeMonbreun (1) first reported a case of naturally occurring histoplasmosis in the dog and since that time 11 more cases (2-10) have been reported in the literature. Only in four of these was the diagnosis established by culture of the causative fungus. DeMonbreun demonstrated that the fungus recovered from dogs with histoplasmosis is identical, both morphologically and in its cultural characteristics, with the *H. capsulatum* found in man.

Since dogs live in closer association with man than any other domestic animal, some investigators have suggested the possibility that dogs may transmit the infection to man, and that fleas and ticks may act as carriers. Olson et al. (11) permitted ticks, *Dermacentor variabilis*, to feed on a dog proved by blood culture to be ill with histoplasmosis. *H. capsulatum* was recovered in pure culture from these ticks soon after feeding.

A list of the published reports of naturally occurring canine histoplasmosis is shown in table 1. It will be seen that a large proportion of the cases occurred in the midwestern United States, the area which is the endemic center of reported cases in man.

Emmons et al. (12) reported that histoplasmin is not specific for histoplasmosis since laboratory animals can be sensitized to it by experimental infection with other fungi, viz, *Blastomyces*, *Coccidioides* and *Haplosporangium*. These authors concluded, "The significance of the surprisingly high incidence of positive reactions to histoplasmin and blastomycin in man remains to be determined. We are not at present in a position to evaluate the clinical or epidemiological signi-

*Associate Professor, Department of Medicine, College of Medicine, Ohio State University; Chairman, Department of Veterinary Pathology, College of Veterinary Medicine, Ohio State University; and Bacteriologist, University Hospital, Columbus, Ohio, respectively.

Table 1. *Published reports of naturally occurring canine histoplasmosis*

Date	Author	Breed	Age	Sex	Habitat	Basis of diagnosis
1939	DeMonbreun, W. A. (1).....	Boston Terrier.....	3 years.....	M	Tennessee.....	(1)
1944	Callahan, W. P., Jr. (2).....	Springer Spaniel.....	7 years.....	F	Missouri.....	(1)
1945	Parsons, R. J. (5) and Everett, M. (4).....	Beagle.....	(7).....	F	Michigan.....	(1)
1945	Birge, R. F. and Riser, W. H. (6).....	{Pekinese.....	4 years.....	M	}Iowa.....	{ (1)
1945	Tomlinson, W. J. and Grocott, R. G. (6).....	{Boston Terrier.....	5 years.....	M		{ (1)
		{Springer Spaniel.....	6 years.....	F		{ (1)
1946	Paré, M. (7).....	Mongrel.....	(7).....	(7)	Brazil.....	(1)
1946	Seibold, H. R. (8).....	Pitt Bull Terrier.....	2½ years.....	M	}Virginia.....	{ (1)
1947	Emmons, O. W., Bell, J. A., and Olson, B. J. (9).....	Pitt Bull Terrier.....	18 months.....	F		{ (2)
1948	Harmon, K. S. (10).....	Fox Terrier.....	{14 months.....	M	}Missouri.....	{ (1)
			{25 months.....	M		{ (1)

¹ Microscopic demonstration of organisms in the tissues.

² Culture of *Histoplasma capsulatum*.

ficance of these positive reactions in view of the demonstrated cross reactions between these antigens." On the other hand, Howell (13) has shown that by the selection of appropriate antigen concentrations the degree of cross reaction is small in experimentally infected guinea pigs.

In the many thousands of histoplasmin tests applied to man in this country, very few have actually detected active histoplasmosis, confirmed by culture of *H. capsulatum* or microscopic demonstration of the causative fungi in the tissues. For this reason many doubt the diagnostic value of the histoplasmin skin test.

In order to evaluate the utility of histoplasmin tests on dogs, we have recently tested 837 dogs in the Veterinary Clinic, Ohio State University, College of Veterinary Medicine, Columbus, Ohio. These dogs were all routine admissions to the clinic, and no selection was made by age, sex, breed, or disease condition.

The dogs were tested with histoplasmin supplied by Dr. Arden Howell of the Public Health Service. H-15 was used in a dilution of 1:1000, and when the supply of H-15 was exhausted, H-42 was substituted. A 1:100 dilution of H-42 corresponds in antigenicity to the 1:1000 dilution of H-15. The histoplasmin was injected intracutaneously in the almost hair-free medial aspect of the flank skin fold. The test was interpreted after 48 hours, and edema 5 mm. or more in diameter was considered a positive reaction.

Of the 837 dogs tested, 643 were given a single test with the 1:1000 dilution of H-15. Two were reactors. The first, a 4-year-old male Scottish terrier from Columbus, Ohio, had edema and erythema 5 mm. in diameter. This animal was suffering from a chronic progressive illness and died 2 months after the test was applied. However, no further studies were possible. The other, a 2-year-old female

fox terrier, also from Columbus, had a reaction 19 mm. in diameter with erythema and marked necrosis.

The remaining 194 animals received the 1:100 dilution of H-42. Of this group 69 were also given simultaneous injections of 1:10 dilutions of H-42. Three dogs reacted to both dilutions. One, a 2½-year-old male springer spaniel from Columbus, showed a 7 mm. reaction to both. A 2½-year-old male border collie, also of Columbus, had a reaction of 10 mm. to both. A one-year-old female English sheep dog from Washington Court House, Ohio, reacted to the larger dose in a very marked manner with 25 mm. of edema, marked surrounding erythema, central necrosis and subsequent sloughing. This animal reacted to the 1:100 dilution with 16 mm. of edema.

Biopsy of spleen, liver and mesenteric nodes was made for culture and histopathologic study from three of the five dogs that were histoplasmin reactors. Two of the three were proved to have histoplasmosis by recovery of *H. capsulatum* in pure culture. *H. capsulatum* was recovered from the liver of one (positive to H-42) and the spleen of the other (positive to H-15). Biopsy tissues from all three showed organisms characteristic of *H. capsulatum* and other histopathologic findings consistent with a diagnosis of histoplasmosis. These three animals all suffered from chronic respiratory infections of a similar nature and all three showed the presence of many partially calcified nodular lesions in the lungs. All were tuberculin negative. A summary of these findings appears in table 2.

Not included in the tests described above was a boxer puppy with acute histoplasmosis which was tested with histoplasmin (H-15 in both 1:100 and 1:1000 dilutions) on two occasions 15 days apart, but failed to react. The diagnosis was established *ante mortem* by culture of *H. capsulatum* from the blood. Cultures taken post mortem from blood, liver, spleen, lung, ascitic fluid and lymph nodes also yielded *H. capsulatum* in pure culture. It has been a frequent ob-

Table 2. Summary of data pertaining to dogs reacting to histoplasmin

Breed	Histoplasmin			Basis of diagnosis	Present state of animal
	Lot	Dilution	Reaction ¹		
Scottish terrier.....	H-15	1:1000	5 mm.	No further studies possible. (¹ ²)	Died after 2 months with chronic progressive illness. Expired; necropsy revealed extensive histoplasmosis.
Fox terrier.....	H-15	1:1000	19 mm.		
Springer spaniel.....	H-42	1:100	7 mm.	Negative findings..... (¹ ²)	Apparently recovered.
Border collie.....	H-42	1:100	10 mm.		Still living.
English sheep dog.....	H-42	1:100	25 mm.		Apparently recovered.

¹ Skin reaction in millimeter of edema.

² Microscopic demonstration of organisms in the tissues.

³ Culture of *Histoplasma capsulatum*.

servation that patients acutely ill or dying of histoplasmosis fail to react to histoplasmin.

Discussion

One of the writers (Prior, 14) has investigated the histoplasmin reactivity of human beings in Ohio. A study of Ohio State University freshmen showed that 62.9 percent of the students from central Ohio were reactors to histoplasmin. Of the 2,391 reactors to histoplasmin, no cases of active histoplasmosis were found, although several were studied in University Hospital, Columbus, Ohio, in an attempt to detect active disease.

In direct contrast to the above work, our study of 837 dogs from the same area revealed only 5 that reacted to the histoplasmin skin test. It is highly significant that three of five animals subsequently were proved to have active histoplasmosis by culture of *H. capsulatum* and demonstration of the causative organisms in the characteristic microscopic lesions. No other fungi or other pathogenic agents were cultured or observed in tissue sections from these cases of naturally occurring histoplasmosis.

Olson et al. (11) states, "The histoplasmin skin test is not specific for histoplasmosis in animals and no evidence has been found that the reaction is specific for histoplasmosis in humans." It should be noted that Olson's conclusions are based upon application of the histoplasmin test to guinea pigs, rabbits and man. However, according to our results it appears that the test is more useful as a diagnostic aid when applied to dogs than to the species mentioned above.

Summary

1. 837 dogs were tested with histoplasmin and only 5 reacted (0.59 percent).
2. Of five dogs reacting to histoplasmin, three were proved to have active naturally occurring histoplasmosis. All failed to react to tuberculin. Attempts to demonstrate pathogenic agents other than *H. capsulatum* were unsuccessful.
3. It appears that the histoplasmin skin test is more useful in the detection of naturally occurring active histoplasmosis in dogs than it is in other species.
4. One dog, terminally ill with acute histoplasmosis, diagnosed by blood culture and confirmed at autopsy by recovery of a pure culture of *H. capsulatum* from liver, spleen, lymph nodes, lung and ascitic fluid, failed to react to histoplasmin on two occasions.

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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 NOVEMBER 12, 1949

The incidence of poliomyelitis in the United States has declined continuously since the week of August 20 (the highest week) in which 3,417 cases were reported. There were 751 cases of poliomyelitis reported this week as compared with 881 last week. Decreases may be noted in 31 States and the District of Columbia, the largest being in New York (from 126 to 94), Texas (from 52 to 29), New Jersey (53 to 35), and Missouri (from 25 to 8). An aggregate increase of 78 cases was reported in 14 States with increases of 22 and 15 in South Dakota (from 1 to 23) and Mississippi (from 2 to 17), respectively. In the geographic areas, decreases were reported for all except the West North Central and the East South Central, which reported increases of 3 (from 108 to 111) and 26 (from 28 to 54), respectively.

The total number of poliomyelitis cases in the Nation to date is 39,792. The five leading States are New York (5,292), Illinois (2,795), Michigan (2,692), California (2,300), and Texas (2,204). The four States and the District of Columbia having the lowest total reported this year are Nevada (16), Delaware (43), Montana (93), South Carolina (101), and the District of Columbia (104).

No unusual incidence was reported for the diseases as shown in the following table. All the communicable diseases are below the 5-year (1944-48) median, except that of poliomyelitis. During the week, one case of leprosy was reported in the District of Columbia, one case of psittacosis in California, and one case of smallpox in Kansas. Two States reported cases of Rocky Mountain spotted fever, one each in North Carolina and Oklahoma.

Of 29 States reporting on rabies in animals, 16 reported no cases, while the remaining 13 reported a total of 111. The States reporting the largest numbers were Texas (33) and New York (16). Indiana reported 20 cases for a 2-week period ending with the current week.

A total of 8,433 deaths was recorded during the week in 93 large cities in the United States, as compared with 9,109 last week; 8,534 and 9,336, respectively, for the corresponding weeks of 1948 and 1947; and 8,711 for the 3-year median. For the year to date the total is 409,556, as compared with 411,273 for the same period last year. Infant deaths for the current week totaled 622; the corresponding week last year, 621; and the 3-year median, 719. The cumulative figure is 29,278 as compared with 29,894 for the same period last year.

Telegraphic case reports from State health officers for the week ended November 12, 1949

(Leaders indicate that no cases were reported)

Division and State	Diphtheria	Encephalitis	Influenza	Measles	Meningitis, meningococcal	Pneumonia	Polio-myelitis	Rocky Mountain spotted fever	Scarlet fever	Small-pox	Tularemia	Typhoid and paratyphoid fever	Whooping cough	Rabies in animals
NEW ENGLAND														
Maine.....				18		3	6		2				11	
New Hampshire.....					1	2	1		4				4	
Vermont.....				1					4				23	
Massachusetts.....	3	1		21			25		36				94	
Rhode Island.....						7	7						12	
Connecticut.....				11	3	19	14		7			1	85	
MIDDLE ATLANTIC														
New York.....	8		2	14	5	144	94		52			2	188	16
New Jersey.....	1		1	34	1	46	35		19			2	126	
Pennsylvania.....	5			46	6	63	26		38			1	169	3
EAST NORTH CENTRAL														
Ohio.....	9		3	20	4	41	21		108			1	98	10
Indiana.....	10		3	27		3	24		26			1	21	20
Illinois.....			1	14	3	54	46		39			2	96	
Michigan.....	1	1		91		15	63		38				122	
Wisconsin.....			4	30	1	7	8		32				84	
WEST NORTH CENTRAL														
Minnesota.....	5	1		14	1	16	23		27				6	
Iowa.....				20		4	24		4				3	
Missouri.....	2			3	3	2	11		4		1	2	11	
North Dakota.....			1	5		3	3		6					
South Dakota.....	5			23	1	2	23		16					
Nebraska.....			3	7		1	18		4			1	10	
Kansas.....	1	1		4		9	9		13		1		13	
SOUTH ATLANTIC														
Delaware.....				7					1				4	
Maryland.....	3			9	1	20	16		17			1	43	
District of Columbia.....	1			15		6	2		3			1	4	
Virginia.....	0		133	13	15	35	8		25			3	19	4
West Virginia.....	6			11	2	5	5		15			1		
North Carolina.....	25		28	26		82	6	1	82				26	
South Carolina.....	33		6	3	1	11	1		9			1	7	1
Georgia.....	21		8	7		10	8		36				4	
Florida.....	4	1	2			7	5							

EAST SOUTH CENTRAL									
Kentucky	8	10	2	6	20	39	1	3	1
Tennessee	9	1	2	41	14	66	1	2	21
Alabama	7	3	2	21	3	20	20	1	3
Mississippi	17	12	—	40	17	15	—	—	6
WEST SOUTH CENTRAL									
Arkansas	8	1	2	29	8	13	2	1	14
Louisiana	4	—	—	24	5	5	—	1	1
Oklahoma	7	3	2	34	15	13	—	1	1
Texas	18	27	4	216	29	16	1	2	59
MOUNTAIN									
Montana	1	45	—	—	2	5	—	—	—
Idaho	—	5	—	4	4	11	—	—	2
Wyoming	—	1	—	6	4	27	1	—	4
Colorado	—	28	—	9	6	5	—	1	3
New Mexico	—	17	—	6	1	9	—	5	3
Arizona	1	13	5	12	5	4	—	4	4
Utah	—	43	—	3	8	3	—	—	9
Nevada	—	—	—	—	1	—	—	—	3
PACIFIC									
Washington	—	3	—	—	11	13	—	—	9
Oregon	3	10	1	15	10	13	—	—	14
California	7	35	1	18	66	72	—	4	64
Total	241	9	50	1,001	751	1,010	1	8	1,504
Median, 1944-48	405	12	58	—	330	1,884	2	11	74
Year to date 45 weeks	6,684	89,988	594,872	2,967	45	65,990	45	3,213	48,259
Median, 1944-48	11,217	204,658	581,154	5,192	304	99,257	304	3,678	85,663
Seasonal low week ends	(27th)	(30th)	(38th)	(37th)	(11th)	(32d)	(38th)	(11th)	(30th)
Since seasonal low week	July 9	July 30	Sept. 3	Sept. 17	March 19	Aug. 13	Sept. 3	March 19	Oct.
Median, 1944-45 to 1948-49	2,916	14,121	6,054	451	438,876	7,730	4	2,863	8,557
	5,045	14,916	8,562	526	17,939	12,962	31	3,203	9,758

† Including paratyphoid fever currently reported separately as follows: New York 1, Ohio 1, Virginia 2, California 3. Cases reported as salmonella infection not included in the table, were as follows: New York 4, Pennsylvania 1.

‡ New York City only.

§ Including cases reported as streptococcal infection and septic sore throat.

¶ Period ended earlier than Saturday.

* Deductions: Poliomyelitis—Michigan, weeks ended August 20 and October 22, 1 case each; North Carolina, week ended October 15, 1 case; Wyoming, week ended October 1, 1 case.

† The median of the 5 preceding corresponding periods (1944-45 to 1948-49).

‡ Leprosy: District of Columbia 1 case.

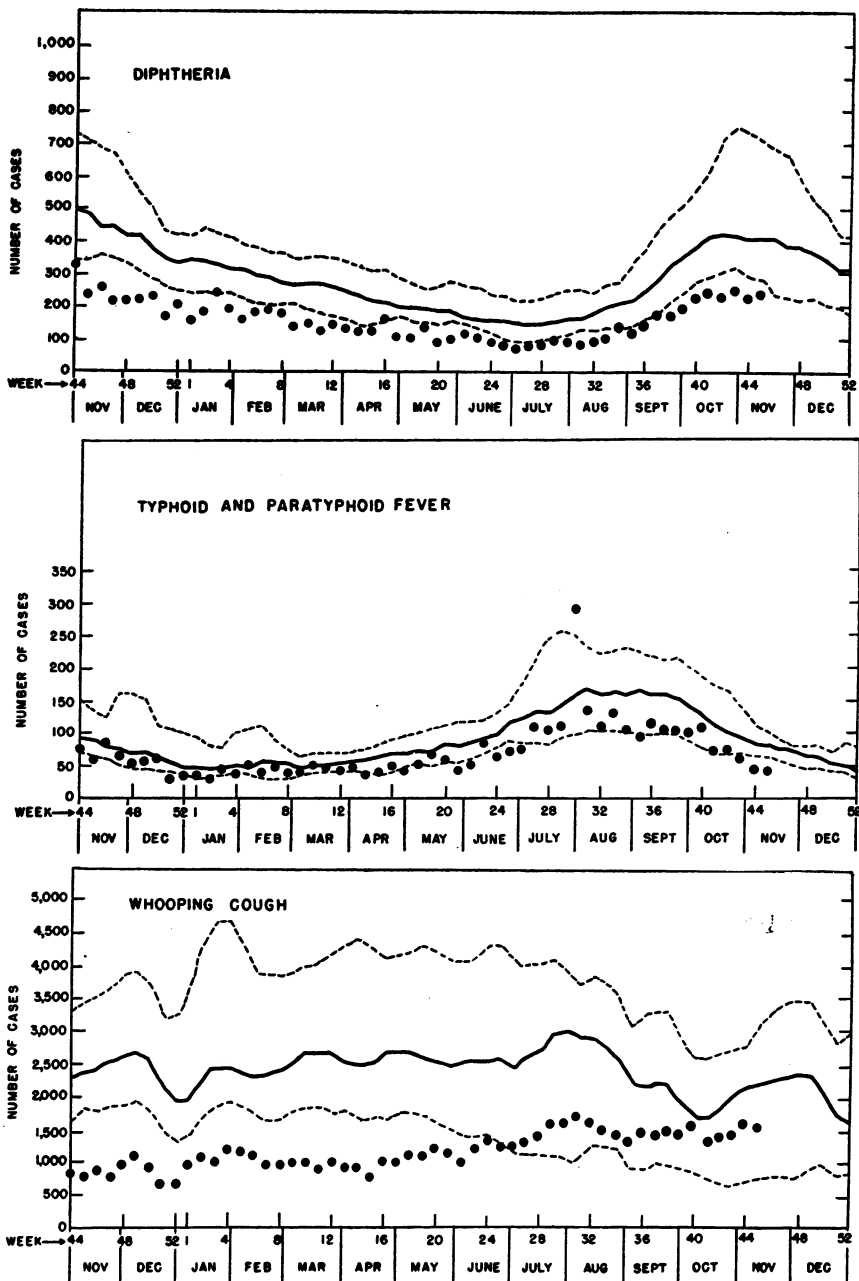
§ *Pittacus*: California 1 case.

¶ Alaska: Measles 5.

Hawaii Territory: Report not received.

Communicable Disease Charts

All reporting States, November 1948 through November 12, 1949



The upper and lower broken lines represent the highest and lowest figures recorded for the corresponding weeks in the 7 preceding years. The solid line is the median figure for the 7 preceding years. All three lines have been smoothed by a 3-week moving average. The dots represent numbers of cases reported for the weeks of 1949.

FOREIGN REPORTS

CANADA

Provinces—Notifiable diseases—Week ended October 29, 1949.—During the week ended October 29, 1949, cases of certain notifiable diseases were reported by the Dominion Bureau of Statistics of Canada as follows:

Disease	New-found-land	Prince Ed-ward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Sas-katch-ewan	Alber-ta	Brit-ish Co-lum-bia	Total
Chickenpox			11		140	141	29	30	67	153	571
Diphtheria					4	8			3	1	16
Dysentery, bacillary						2					2
Encephalitis, infectious						2					2
German measles			3		4	14			22	10	53
Influenza			14			4	1	1			20
Measles			27		82	50	56	146	49	308	718
Meningitis, meningococcal						2				1	3
Mumps			53		79	126	2	2	22	179	463
Poliomyelitis				3	5	4		2	3		19
Scarlet fever	7		2	1	43	33	7	2	21	18	134
Tuberculosis (all forms)			4	19	123	19	17	4	72	31	289
Typhoid and paratyphoid fever					3	3			2	9	17
Undulant fever					6	1	3				10
Venereal diseases:											
Gonorrhea			19		81	66	43	17	39	95	374
Syphilis	6		8	6	52	23	2	13	6	18	134
Other forms										2	2
Whooping cough	1		4		41	21	2		14	16	99

FINLAND

Notifiable diseases—September 1949.—During the month of September 1949, cases of certain notifiable diseases were reported in Finland as follows:

Disease	Cases	Disease	Cases
Cerebrospinal meningitis	7	Poliomyelitis	52
Diphtheria	106	Scarlet fever	296
Dysentery	2	Syphilis	65
Gonorrhea	872	Typhoid fever	29
Paratyphoid fever	153		

MADAGASCAR

Notifiable diseases—August and September 1949.—Notifiable diseases were reported in Madagascar and Comoro Islands during August and September 1949 as follows:

Disease	August 1949			
	Aliens		Natives	
	Cases	Deaths	Cases	Deaths
Beriberi.....			1	
Bilharziasis.....			64	
Cerebrospinal meningitis.....			11	4
Diphtheria.....	2	2	2	
Dysentery:				
Amebic.....	4		230	
Bacillary.....			11	
Erysipelas.....	17	2		
Influenza.....	49		4,593	56
Leprosy.....			28	
Malaria.....	267	3	35,270	212
Measles.....			128	2
Mumps.....	4		146	
Plague.....			4	4
Pneumonia, broncho.....			659	71
Pneumonia, pneumococcic.....			595	60
Puerperal infection.....			5	
Relapsing fever.....			1	
Tuberculosis, pulmonary.....	9		122	19
Trachoma.....	1			
Typhoid fever.....			4	
Whooping cough.....	12		396	7

Disease	September 1949			
	Aliens		Natives	
	Cases	Deaths	Cases	Deaths
Beriberi.....			2	
Bilharziasis.....			153	1
Cerebrospinal meningitis.....			7	4
Diphtheria.....	1			
Dysentery:				
Amebic.....	4		251	3
Bacillary.....	1			
Erysipelas.....			14	1
Influenza.....	56		3,964	41
Leprosy.....			30	1
Malaria.....	300	2	29,743	173
Measles.....			108	1
Mumps.....	1		117	
Plague.....			17	17
Pneumonia, broncho.....	1		302	56
Pneumonia, pneumococcic.....	1		423	54
Poliomyelitis.....			1	
Puerperal infection.....			7	2
Relapsing fever.....	1			
Tuberculosis, pulmonary.....	7	1	97	23
Trachoma.....	1		2	
Typhoid fever.....	3		12	1
Whooping cough.....	2		397	18

NEW ZEALAND

Notifiable diseases—5 weeks ended October 1, 1949.—During the 5 weeks ended October 1, 1949, certain notifiable diseases were reported in New Zealand as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Actinomycosis	1		Malaria	2	
Cerebrospinal meningitis	13	1	Ophthalmia neonatorum	1	
Diphtheria	18		Pollomyelitis	12	
Dysentery:			Puerperal fever	4	
Amebic	4		Scarlet fever	134	
Bacillary	6		Tetanus	4	8
Encephalitis, lethargic	1		Trachoma	1	
Erysipelas	13		Tuberculosis (all forms)	179	58
Food poisoning	12		Typhoid fever	17	1
Influenza	8	5	Undulant fever	9	

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

Note.—The following reports include only items of unusual incidence or of special interest and the occurrence of these diseases, except yellow fever, in localities which had not recently reported cases. 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.

Plague

Brazil.—Plague has been reported in Brazil as follows: During the month of May 1949, 8 cases with 2 deaths, in Ceara State, 1 case in Pernambuco State; during the month of June 1949, 1 case in Ceara State.

Madagascar.—During the period October 11–20, 1949, 10 fatal cases of plague were reported in Fianarantsoa Province, Madagascar.

Netherlands Indies—Java—Jogjakarta.—During the week ended October 8, 1949, 35 cases of plague, all fatal, were reported in Jogjakarta Residency, Java. Plague has also been reported in Jogjakarta City as follows: Week ended October 22, 8 cases; week ended October 29, 6 cases.

Peru.—During the month of May 1949, plague was reported in Peru as follows: Lima Department, Huacho Province, 3 cases, 1 death; Piura Department, Huancabamba Province, 3 cases.

Smallpox

Argentina.—During the period June 1–30, 1949, 86 cases of smallpox (alastrim) were reported in Argentina, including 36 cases in Buenos Aires Province and 19 cases in Chubut Territory.

French Equatorial Africa.—During the month of August 1949, 102 cases of smallpox, with 23 deaths, were reported in French Equatorial Africa.

Mexico—Mexico City.—For the week ended October 22, 1949, 7 cases of smallpox were reported in Mexico City, Mexico.

Syria—Aleppo and Hama.—During the week ended October 15,

1949, 8 cases of smallpox were reported in Aleppo, Syria, and 19 cases were reported in Hama.

Typhus Fever

Mexico.—During the period October 2–22, 1949, 9 cases of typhus fever were reported in Mexico City, Mexico, and during the period October 9–22, 7 cases were reported in the city of Monterrey.

Poland.—During the period September 4–October 1, 1949, 36 cases of typhus fever were reported in Poland.

DEATHS DURING WEEK ENDED NOV. 12, 1949

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

	Week ended Nov. 12, 1949	Correspond- ing week, 1948
Data for 93 large cities of the United States:		
Total deaths.....	8,433	8,534
Median for 3 prior years.....	8,711	
Total deaths, first 45 weeks of year.....	409,556	411,273
Deaths under 1 year of age.....	622	621
Median for 3 prior years.....	719	
Deaths under 1 year of age, first 45 weeks of year.....	29,278	29,894
Data from industrial insurance companies:		
Policies in force.....	70,056,330	70,814,473
Number of death claims.....	7,798	10,618
Death claims per 1,000 policies in force, annual rate.....	5.8	7.8
Death claims per 1,000 policies, first 45 weeks of year, annual rate.....	9.1	9.3