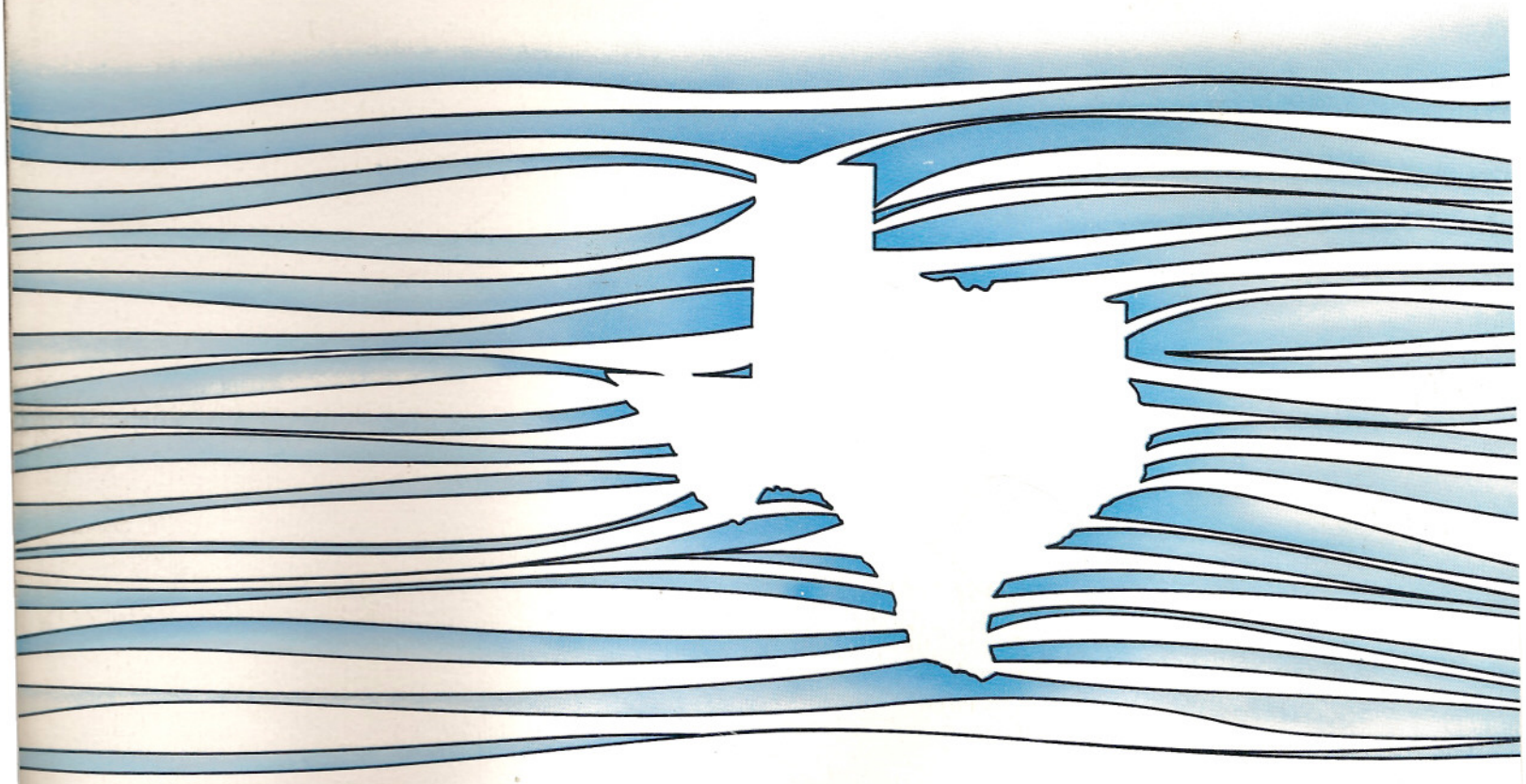

REPORTED MORBIDITY AND MORTALITY IN TEXAS 1985 ANNUAL SUMMARY

TEXAS DEPARTMENT OF HEALTH
BUREAU OF EPIDEMIOLOGY

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CHAIRMAN, TEXAS BOARD OF HEALTH

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COMMISSIONER OF HEALTH

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FOREWORD

Teachers know too well that a lesson may be dutifully learned but never applied in real-life action or thought. Likewise, the collection of communicable disease reports could proceed, as in decades past, for the single purpose of producing a statistical report each year, with little use save for the medical historian. What a waste of time and dollars! What a disservice to the public, in burying golden data out of sight!

An excellent contrast is offered in this summary of reportable diseases and conditions for 1985, the eighth in the series of reports. Reporting of brucellosis in unpasteurized cheese, for example, played a role in the Board of Health's prohibition on the sale of unpasteurized milk. The analysis of viral hepatitis provides further ammunition in the fight to control sexually transmissible diseases, as does the exposition of congenital syphilis. The steepness of the trend line for AIDS causes us to have a special urgency in planning for control of human immunodeficiency virus infections and treatment of its victims. Documentation of transmission of infections such as those due to Haemophilis inf*luenzae*, hepatitis A virus, and antibiotic-resistant *Shigella* at child-care facilities has lead to the distribution of training kits and control manuals to over 5000 such facilities in Texas and a campaign for use of Hib vaccine in toddlers. Guidelines on prevention of influenza, tuberculosis, and other infections among residents of nursing homes have been published recently, and the reader will find the antecedents for these in the annual summary series. Finally, the material in "the back of the book"--the "other epidemiologic activities"--gives warnings and clues for future actions: a "tropical" disease, leishmaniasis, that may increase, as exurbs and suburbs crowd into the endemic focus; Lyme disease, the "Connecticut Yankee" disease that begins to look "all-American," that will be added in 1986 to the list of reportable diseases; and viral surveillance, a concept that takes on additional value as the means for prevention and intervention gain in effectiveness.

We encourage the reader to explore the data and the commentaries, as we have, for the actions that they suggest--and then, act.

Ron J. Anderson, M.D., Chairman
Texas Board of Health

Robert Bernstein, M.D., F.A.C.P.
Commissioner of Health

INTRODUCTION

HISTORICAL BACKGROUND

Historical records indicate that the first interest in public health work in Texas most likely resulted from epidemics of yellow fever which occurred in areas along the Gulf Coast between 1837 and 1864. As a result of these outbreaks, which caused thousands of deaths, the citizens of Galveston approved in March 1850 the first quarantine regulations passed in the state of Texas. Within six years, the occurrence of smallpox throughout inland towns of Texas and yellow fever in coastal towns necessitated quarantine procedures over the entire state. Consequently, the Quarantine Act of 1856 was passed. This act gave cities and counties the authority to establish their own quarantine regulations as appropriate for their respective jurisdictions.

In the late 1870s, epidemics of yellow fever and smallpox raged throughout Mexico and bordering states and threatened to spread into Texas. Government officials feared this approaching "sickly season" and put forth every possible effort to prevent it. On April 10, 1879, the quarantine laws were revised, and the position of State Health Officer was created. Robert Rutherford was appointed by Governor O.M. Roberts to be the first State Health Officer of Texas. This action led to the creation of the Texas Quarantine Department in 1891. The department was reorganized in 1903 as the Department of Public Health and Vital Statistics and again in 1929 as the State Health Department.

In 1910, a year after the first State Board of Health was appointed, the Sanitary Code was enacted. It required the reporting of anthrax, Asiatic cholera, bubonic plague, dengue, diphtheria, epidemic dysentary, epidemic meningitis, epidemic typhus, leprosy, scarlet fever, smallpox, trachoma, tuberculosis, typhoid, and yellow fever. In May 1920, procedures for the reporting and management of communicable diseases in Texas became operative. Since that time, a system based on the communicable disease reports originating with practicing physicians and forwarded by designated reporting agents has served as the primary mechanism for the surveillance of communicable diseases of the Texas Department of Health.

Smallpox has been eradicated, and most of the other diseases included in the original Sanitary Code are now rare events, if they occur at all in Texas. Because of this, it is necessary to evaluate and revise applicable public health laws from time to time. The Texas Board of Health has the authority to adopt specific rules and regulations relating to the prevention, reporting, and control of communicable diseases and to designate which diseases are "reportable" and which are "quarantinable." Some of the most important Board actions affecting communicable disease reporting in Texas occurred in:

March 1983: The Board added acquired immune deficiency syndrome (AIDS) to the list of reportable diseases in Texas.

September **1983:** The Texas Communicable Disease Prevention and Control Act of 1983 became effective. This act made significant changes in communicable disease reporting procedures, and added registered nurses, laboratory directors, school administrators, day-care center directors, nursing home administrators, hospital administrators, and hospital infection control practitioners to those required to report communicable diseases to the Texas Department of Health.

July 1984: Rheumatic fever and smallpox were removed from the list of reportable diseases, and bacterial meningitis, campylobacteriosis, coccidioidomycosis, dengue, histoplasmosis, legionellosis, toxic shock syndrome, and viral hemorrhagic fevers were added.

September **1985:** The Texas Board of Health under authority of the Occupational Disease Reporting Act, designated certain occupational diseases reportable in Texas: acute occupational pesticide poisoning, asbestosis, elevated blood lead in adults, and silicosis.

DISEASE SURVEILLANCE

Surveillance of disease refers to the ongoing examination of the occurrence and distribution of disease and events or conditions that are important to effective control. Surveillance is a continuous and systematic process which includes: the collection of demographic and

environmental data; the evaluation of morbidity, mortality, and laboratory data and information on animal reservoirs and vectors; investigation of epidemics and individual cases; and special surveys **(e.g.,** of serologic studies, hospital admissions, registries).

The objective of surveillance is to determine the extent of disease and the risk of transmission so control measures can be applied effectively and efficiently. Surveillance data must be current and complete to reveal the actual occurrence and distribution of disease. The Bureau of Epidemiology, Texas Department of Health, is responsible for coordinating communicable disease surveillance in Texas and requires that disease reports include the patient's name, age, sex, race, date of onset, and method of diagnosis. For selected diseases, additional information such as the source of infection, mode of transmission, and confirmatory laboratory results is requested. In certain outbreak situations, it is also necessary to identify susceptibles and to recommend specific control measures. These data are necessary if the objective of surveillance is to be achieved.

THE REPORTING SYSTEM

There are over 300 designated reporting agents throughout the state; these include city and county health departments and health districts, selected state schools, state hospitals, veterans' hospitals, and military installations. Numerous public and private hospitals, physicians in private practice, and other health professionals also regularly report to the Bureau of Epidemiology.

In January 1984, the Bureau of Epidemiology implemented the Reportable Disease Surveillance Program, a microcomputer system which allows epidemiologists and other support staff within the Bureau direct access to Texas morbidity data. These data may now be analyzed and disseminated to reporting agents in a more timely fashion.

A toll-free telephone number (1-800-252-8239) is available to facilitate regular morbidity and outbreak reporting in Texas. This system assures the rapid transfer of data from physicians, nurses, hospitals, and laboratories to local and regional health departments who in turn forward these data to the Texas Department of Health. This telephone line is located in the Bureau of Epidemiology office in Austin and is answered 24 hours a day; messages may be left on an answering machine after regular working hours and on holidays.

The Bureau of Epidemiology also supplies report cards, Form **EPI-1** (see Appendix), to designated reporting agents. The forms are completed and returned to the Bureau of Epidemiology each week, or reports can be made directly to the central office on the toll-free number. Information regarding reportable diseases is also received by the Bureau of Epidemiology through other means including laboratory reports, completed case investigation forms, and death certificates which have been filed with the Bureau of Vital Statistics, Texas Department of Health.

Once the data are received in the Austin office, they are organized, recorded, and examined daily by epidemiologists and other technical staff to determine disease trends, fluctuations in morbidity, seasonal variations, changes in disease distribution, and other aspects of the natural history of endemic and epidemic diseases. **A** statistical summary of these data is published monthly in ***Texas Preventable Disease News*** and distributed throughout the state to local health department directors and staff and hospital infection control practitioners, nationally to other state epidemiologists, and upon request to other interested persons. This publication describes preventable disease control activities on local, state, and national levels, as well as other items of public health interest.

The communicable disease reporting system in Texas is needed for the successful prevention and control of certain communicable diseases which threaten the lives and well-being of the citizens of Texas. Early detection of unusual characteristics or patterns of diseases often provides sufficient evidence to warrant the initiation of preventive measures. In addition to statewide reporting, cooperative efforts in the area of communicable disease control are made with other state health departments and the national Centers for Disease Control in Atlanta, Georgia.

OTHER SOURCES OF DATA

Data submitted to the Bureau of Epidemiology through the statewide morbidity reporting system are supplemented by other data collection procedures and surveillance activities of the Texas Department of Health. The Bureau of Vital Statistics provides mortality data on infectious and other reportable diseases and conditions to the Bureau of Epidemiology. The Bureau of Laboratories provides results of serologic and bacteriologic testing, virus isolation, and other special laboratory studies. The Bureau of Veterinary Public Health (Zoonosis Control Division) coordinates with the Bureau of Epidemiology on data relating to rabies, arboviral disease, and other zoonotic diseases affecting man. The Bureau of Communicable Disease Services (STD Control Division, Immunization Division, and Tuberculosis Control Division) plays an important role by providing data directly related to reportable disease investigations and other Bureau of Epidemiology activities.

The population figures used in computing incidence rates for the state for the period 1976-1980 (Table II, Appendix) are from the ***Current Population Reports,*** Series P-25, published by the Federal Bureau of the Census. The population figures for 1981-1985 were provided by the Bureau of State Health Planning and Resource Development, Texas Department of Health.

EXPLANATORY NOTES

The reporting period for the data contained in this report is the calendar year January 1, 1985-December 31, 1985. Frequency counts include cases whose dates of onset occurred during this period. Delayed reports, that is, case reports received during 1985 but whose onsets occurred in 1984 are excluded from this report.

The distribution of cases among Texas counties is based on the patient's county of residence. Cases are allocated to their county of residence regardless of where they become ill or are hospitalized or diagnosed. Individuals living outside Texas but who become ill or are hospitalized or diagnosed in Texas are not included in Texas morbidity. These cases are referred through an interstate reciprocal notification of disease system to the appropriate state epidemiologist in the state where the patient resides.

Incidence rates, which measure the frequency of the occurrence of new cases of a disease within a defined population during a specified period of time, are expressed in this report as the number of reported cases of a disease per 100,000 population. Rates have been rounded in most cases to one decimal place. When comparing rates for different population groups or time periods, there are limitations inherent in population projections and there are probable variations in the degree of underreporting. Rates based on small frequencies should be interpreted with caution since sampling errors may be large. Case-fatality ratios in this report are expressed as percentages. These ratios measure the number of persons reported as having a specific disease who die as a result of that illness.

The mortality data which appear in Table III, Appendix, are tabulations provided by the Statistical Services Division, Bureau of Vital Statistics, and may not be identical to the mortality data referred to in the summaries of individual diseases. These discrepancies may be due in part to the procedures established by the Ninth Revision of the ***International Classification of Diseases*** whereby the category to which the death is assigned is determined by the information provided on the death certificate.

The Bureau of Epidemiology uses the following definitions of the five racial/ethnic categories referred to throughout this report. These definitions are provided by the ***U.S. Department of Commerce: Statistical Policy Handbook*** and published in the Centers for Disease Control's ***Manual of Procedures for National Morbidity Reporting & Public Health Activities.***

White: A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

Hispanic: A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race.

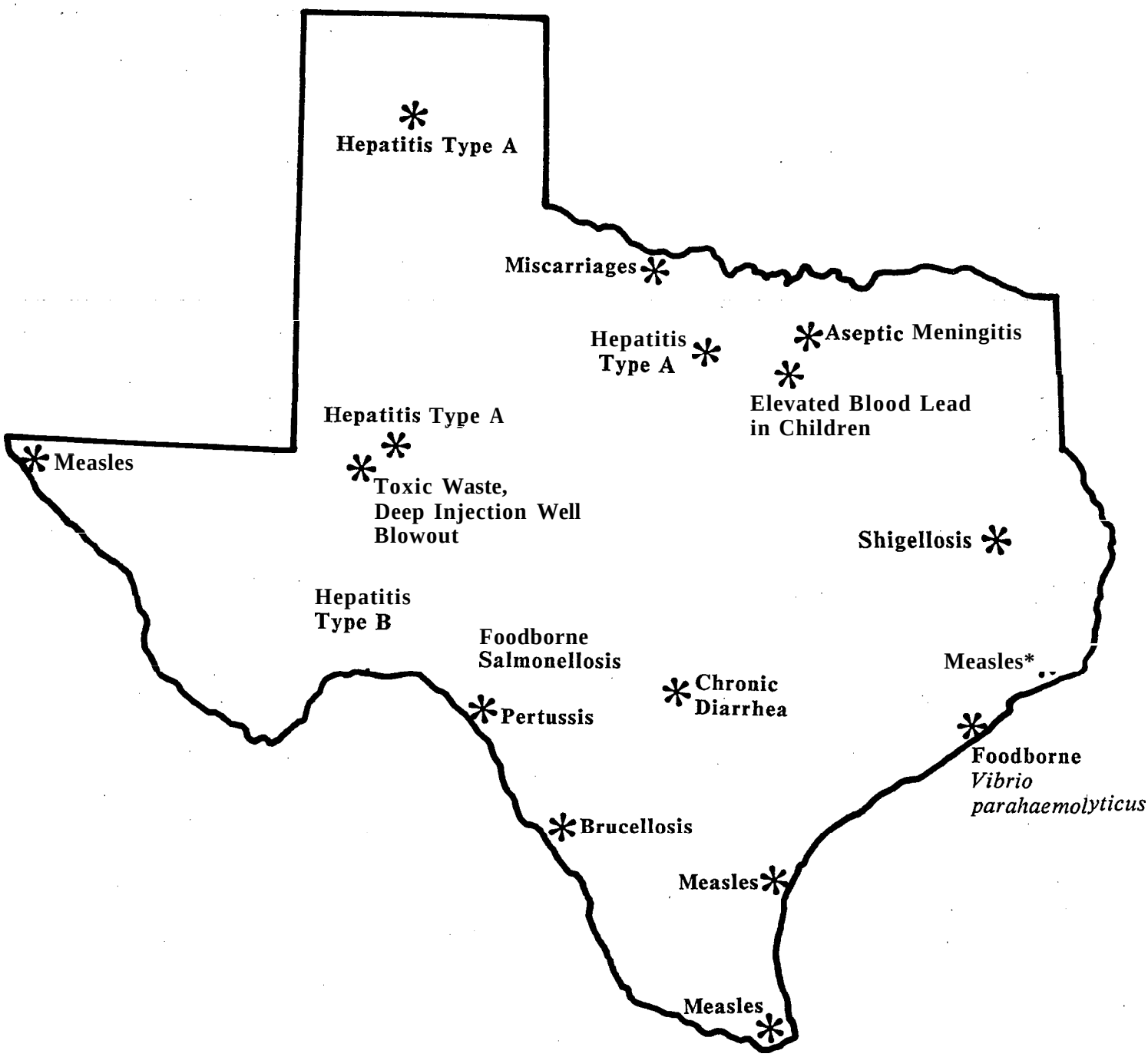
Black: A person having origins in any of the black racial groups of Africa.

Asian or Pacific Islander: A person having origins in any of the original peoples of Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands. This area includes China, Japan, India, Korea, the Philippine Islands, and Samoa.

American Indian or Alaskan Native: A person having origins in any of the original peoples of North America, and who maintains cultural identification trough tribal affiliation or community recognition.

Figure 1

Selected Investigations in 1985
Bureau of Epidemiology, Texas Department of Health



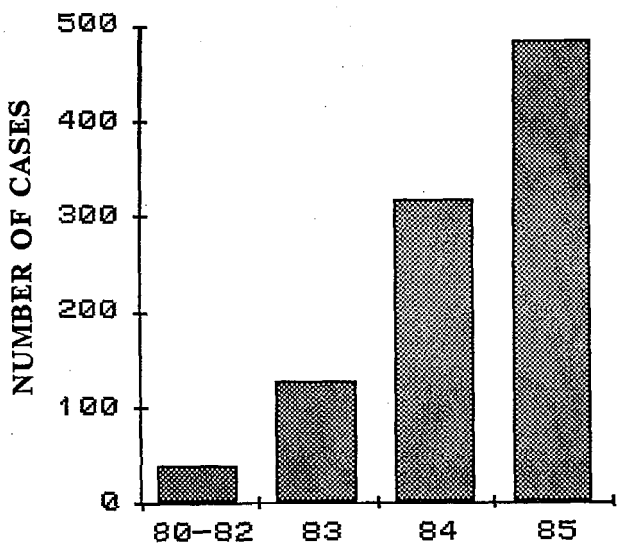
SELECTED DISEASE SUMMARIES

ACQUIRED IMMUNE DEFICIENCY SYNDROME

Acquired immune deficiency syndrome (AIDS) was added to the list of reportable diseases in Texas in March 1983 at a time when only 16 cases had been reported statewide. Since then, the incidence of AIDS has continued to increase in Texas: 39 cases had onset between 1980-1982; 126 had onset in 1983; 317 had onset in 1984, an increase of 152% from the previous year; and 483 cases had onset in 1985, a 52% increase (Figure 2). The number of confirmed cases reported nationally had been doubling approximately every six months, but that doubling rate has now been extended to every 13 months. The geographic distribution of AIDS cases in Texas is presented in Figure 3.

Figure 2

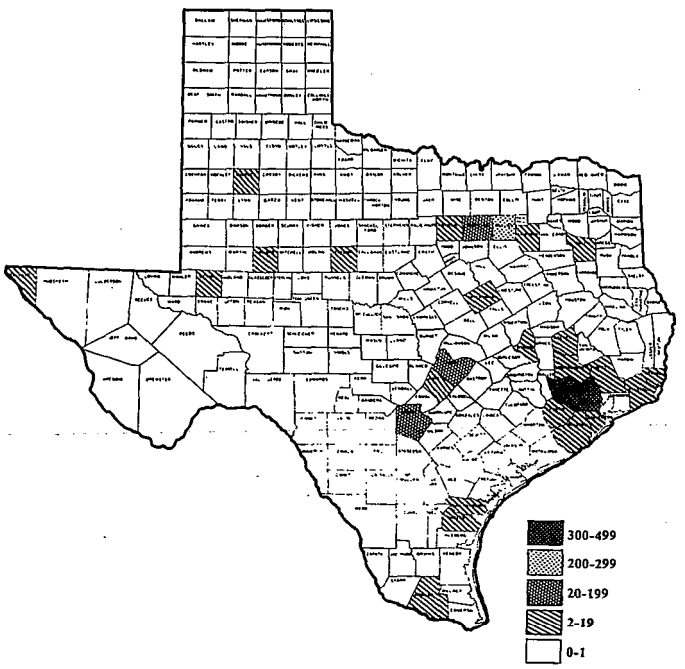
Acquired Immune Deficiency Syndrome
By Year of Diagnosis, Texas
1980-1985



Although the number of cases in all age groups increased during 1985, the relative proportion of cases among risk groups remained stable. The overwhelming majority of Texas cases (90%) were homosexual or bisexual males; 3% were IV drug users; 2% were transfusion associated; 1% were hemophiliacs; and 4% had no apparent or unknown risk factors. Nationally, only 73% of the cases were homosexual/bisexual males, and 17% IV drug users. The very large number of IV drug users from the New York/New Jersey metropolitan

Figure 3

Acquired Immune Deficiency Syndrome
By County of Residence, **Texas**
1980-1985



area skew the national data. Twenty-seven (3%) female cases have been reported in Texas since 1983, and 44% were IV drug users.

The proportion of AIDS cases associated with blood transfusions has increased both in Texas and nationally from 1% to 2%. This is due to the long period between infection with human immunodeficiency virus (HIV), formerly designated as human T-lymphotropic virus type III/lymphadenopathy-associated virus (HTLV-III/LAV) and development of AIDS. Blood banks throughout Texas now use antibody detection kits to screen the state's blood supply for HIV and have reported that 0.25% of the donated units were repeatedly reactive by enzyme-linked immunoabsorbent assay (ELISA) and Western Blot. The benefits of serologic screening of blood donations which began early in 1985 and self-deferral of donors who are at increased risk of acquiring AIDS will, therefore, not be fully realized in AIDS reporting for a period of years.

In June 1985, sites to provide testing and counseling for members of high-risk groups

were established in 25 metropolitan areas. Results varied among these HIV sites, but overall 13% of the individuals tested were repeatedly reactive by ELISA. Due to the anonymous nature of the screening, it is not clear to what degree this reflects the true rate of positivity among persons who are at high risk of acquiring AIDS.

Nationally, three-fourths of pediatric AIDS cases result from perinatal transmission of HIV therefore, the race/ethnicity and geographic distribution of pediatric AIDS patients are similar to those of reported AIDS cases among adult females. In Texas, females account for a small number of cases which is reflected in the small number of pediatric cases. Seven cases of AIDS (1% of the total) have been reported in Texas children under 13 years of age. Of these pediatric cases, three were related to a mother at risk, and four were tranfusion associated.

In the area of prevention, education is currently the only .significant means of control, and studies now suggest that many gay men have changed their sexual lifestyles. One study has indicated that between 1980-1983, rates of rectal and pharyngeal gonorrhea in men in Manhattan decreased 59%. Surveys of self-reported behavior of gay men in San Francisco have shown decreases in both the average number of sexual partners and sexual practices known to transmit HIV infection. In Houston, the numbers of cases of gonorrhea and syphilis among patients at a gay health center have decreased steadily. However, due to the long incubation period between exposure to HIV and development of AIDS, these alterations in lifestyle may not affect the number of AIDS cases for several years.

AMEBIASIS

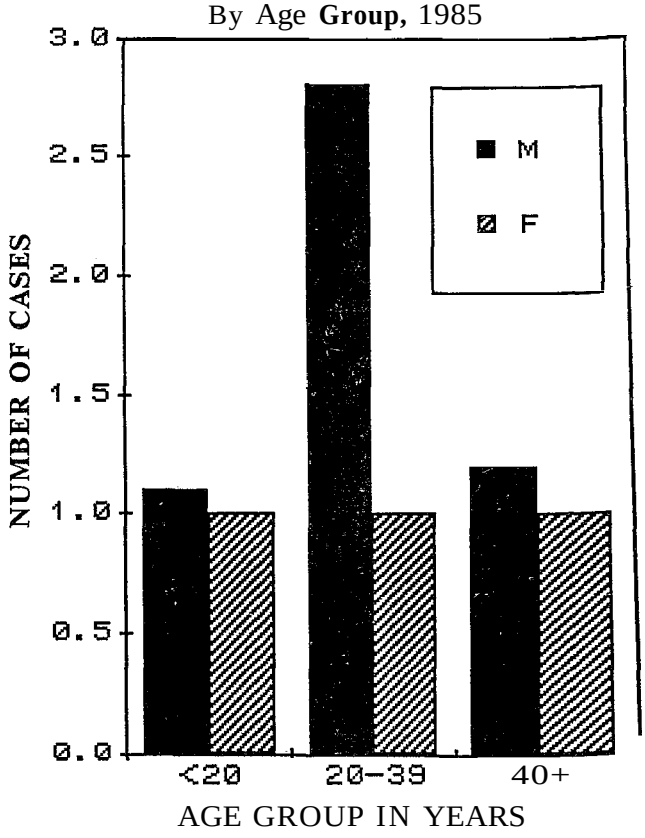
The number of amebiasis cases reported in Texas in 1985 decreased for the fourth consecutive year and resulted in an incidence rate of 1.7 cases per 100,000. The 279 cases reported last year represented a 22% decrease from the 356 cases reported in 1984 and a 54% decrease from the peak of 604 cases reported in 1981.

In Texas, large numbers of amebiasis cases, many of whom were diagnosed during serologic screenings, are reported from Texas Department of Mental Health and Mental Retardation facilities. In 1985, 64 cases (23%) were identified as residents of these facilities, 58 in Travis County alone. Because of the special problems associated with institutionalized cases, i.e., poor personal hygiene and close personal contact, and the small risk of spread to the general population, these cases will not be included in further analysis.

In spite of the decrease in cases, the demographic characteristics of amebiasis in Texas have remained remarkably constant in recent years. Public Health Region (PHR) 8 again accounted for the greatest number of cases (65) even though this area of the state experienced a 44% decrease in reported cases from the 1984 total (117).

Figure 4

Male:Female Ratios of Reported Amebiasis Cases in Texas By Age **Group,** 1985



Of the 215 non-institutionalized cases, 62% were male, and 38% were female. This predominance of male cases has been consistently reported in Texas. It is interesting to note that the overall 1.6:1 (male:female) ratio varied considerably among age groups. Gases less than 20 years of age and over 40 years had comparable sex ratios, 1.1:1 and 1.2:1, respectively, However, in the 20-39 year age group, the ratio was 2.8:1, with males predominating (Figure 4). Possible explanations

for the excess of young, adult male cases of amebiasis are related to two specific populations at risk of acquiring the disease: 1) amebiasis is a well-established sexually transmitted disease among male homosexuals, and 2) in many developing countries, including Mexico and Central America, amebiasis is endemic. Consequently, amebiasis can easily be imported into the state by the large numbers of adult males from these areas who come to Texas seeking work. Because only limited information is collected as part of the case report, the numbers of cases in either of these two high-risk groups cannot be documented. However, health care providers should be aware of the potential for amebiasis among male clients who are homosexual or from endemic areas.

Incidence rates of amebiasis in Texas in 1985 were highest in infants and children. The age-specific incidence rate in infants under one year of age was 4.6 cases per 100,000 population and was more than twice that of the state (1.7). The incidence rate in children 1-4 years of age was 2.7 cases per 100,000 population. Of the 195 non-institutionalized cases for whom race/ethnicity was indicated, 57% were Hispanic, 36% were white, 4% were Asian, and 2% were black. No information-as to race/ethnicity was provided for 20 individuals.

ASEPTIC MENINGITIS

The number of cases of aseptic meningitis reported each year can vary by as much as 86% from one year to the next (Figure 5). During the last three years, the number has flucuated widely: up 50% in 1983, down 45% in 1984, and up again in 1985 by 53%. The increase in 1983 was attributed to the predominance of Coxsackievirus B5 circulating that year. No clear pattern emerged between reported cases of aseptic meningitis and etiologic agents in 1984.

Figure 5

Percentage Increase/Decrease from Previous Year of Reported Cases of Aseptic Meningitis Texas, 1976-1985

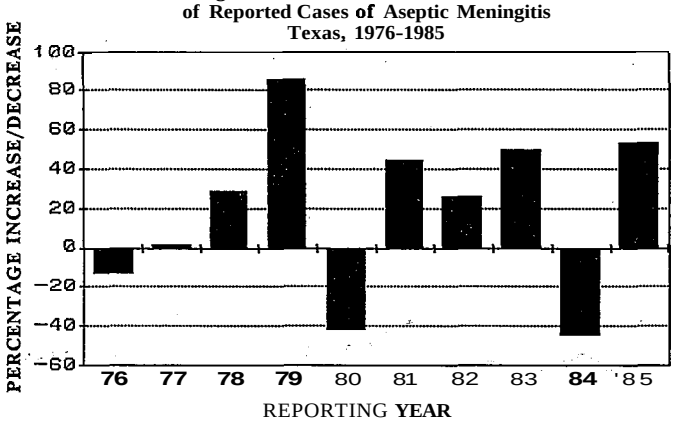


Table 1

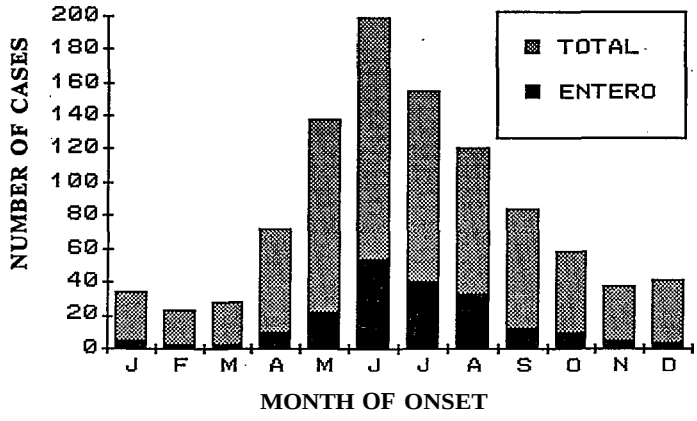
Viral Agents Associated with Reported Cases of Aseptic Meningitis and Encephalitis in Texas, 1985

Viral Agent	Aseptic Meningitis	Encephalitis
Adenovirus	1	1
Echoviruses	143	3
Coxsackieviruses (Group A)	3	-
Coxsackieviruses (Group B)	21	2
Enteroviruses (not specified)	25	1
Cytomegalovirus	3	-
Herpes simplex	-	14
Herpes eoster	-	3
Chickenpox	-	3
St. Louis encephalitis	-	1
Western equine encephalitis	-	1
TOTAL	196	29

Again in 1985, no single etiologic agent predominated, however, enteroviruses in general may have been responsible for the increase in cases. The etiologic agent was reported for 20% of the 989 cases reported in 1985. Of the 196 agents, 192 were enteroviruses (Table 1). Also, the seasonal distribution of cases due to enterovirus infections parallels the

Figure 6

Reported Cases of Aseptic Meningitis Total Cases and Enteroviral Cases Compared By Month of Onset, Texas - 1985



distribution of all cases; both have a definite peak in June (Figure 6). In contrast, during 1984, the number of cases increased gradually over the summer months and declined in the fall.

A geographic cluster of 38 cases of aseptic meningitis related to Echovirus 4 was reported in Bell County in 1985; this cluster accounted for 69% of the 55 cases associated with the virus statewide. The first case had onset May 21 and the last on September 23; 22 of the 38 cases occurred during June. Five of these cases occurred in two families during a ten-day period.

BACTERIAL MENINGITIS

Although the reporting of "meningitis" in Texas has been required by law since 1920, and meningococcal infections--those caused by Neiserria meningitidis--have been recorded since 1952, the reporting of "bacterial meningitis" caused by organisms other than *N.* meningitidis has been required only since 1984 when the rules and regulations of the Communicable Disease Prevention and Control Act were revised. Surveillance, however, of other types of bacterial meningitis, based on voluntary reporting, has been maintained by the Bureau of Epidemiology since 1980, and early in 1982, the Texas Department of Health began an initiative to encourage physicians, hospital laboratories, and other health professionals to report cases of meningitis caused by Haemophilus influenzae. The result of this initiative was an overall increase in the number of cases of all bacterial meningitis (not just H. influenzae) reported throughout Texas.

Because N. meningitidis, H. influenzae, and Streptococcus pneumoniae accounted for 70% of the bacterial meningitis cases reported in Texas in 1985, only these three infections will be summarized in detail.

HAEMOPHILUS INFLUENZAE MENINGITIS

Haemophilus influenzae type b (Hib) is the most common cause of bacterial meningitis in children under five years of age in the United States. The organism also causes other serious invasive illnesses, such as epiglottitis, septicemia, cellulitis, septic arthritis, osteomyelitis, pericarditis, and pneumonia. Reports indicate that by five years of age, one out of every 200 children in the United States will have had a systemic infection due to H. influenzae.

In 1985, 554 cases of H. *influenzae* meningitis were reported in Texas. This represented an increase of 5.7% from the 524 cases reported in 1984. A total of 526 cases (95% of the total) occurred in children under five years of age and accounted for 66% of all the bacterial meningitis reported in the state in this age group. Less than two percent of the H. influenzae meningitis cases in 1985 were caused by organisms other than type b. These nine cases included 2 type a, 2 type d, 1 type f, and 4 reported only as "non-b."

Secondary disease, that is, illness occurring from 1-60 days following contact with a child who has an Hib infection, accounts for less than 5% of all invasive Hib disease. However, the risk of secondary disease among children exposed to a primary case in a day-care center is a matter of concern to health professionals. Of the 317 cases on whom case investigation forms were completed in 1985, 103 children were enrolled in day care at the time they became ill, but no outbreaks of H. influenzae meningitis in day-care centers were reported to the Bureau of Epidemiology. Two cases of H. influenzae meningitis occurred in children attending the same day-care center, but upon investigation, these cases were found to be independent events and not associated cases. The first case became ill 17 days after he had last attended the day-care center. The report indicated nine contacts to the child, none of whom received prophylaxis. The second case developed meningitis 13 days after the first case, and 35 of the 50 contacts received rifampin. No other cases are known to have occurred in this day-care center. Antibiotic sensitivity studies on the *H.* influenzae isolates from these two cases revealed that one organism was resistant to ampicillin and the other was sensitive, further supporting the theory that these cases were not associated.

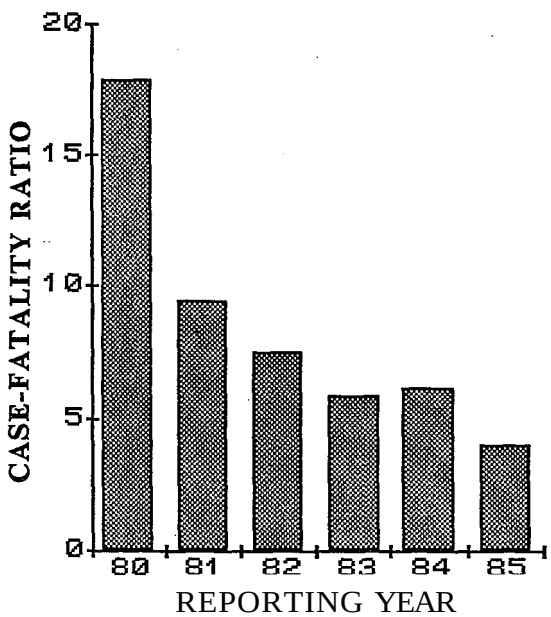
Studies have indicated a higher secondary attack rate for household contacts than for day-care contacts. In Texas in 1985, five episodes of secondary disease among household contacts were reported. These included three set of male twins, 6 months, 23 months, and 3 years of age; a sister and her brother, ages 9 months and 22 months, respectively; and sisters, 13 months and 31 months of age. None of these children were enrolled in day-care centers. The Immunization Practices Advisory Committee (ACIP) recommends that in any household in which a case of invasive Hib disease has occurred and in which another child under

four years of age resides, all members of the household, including adults, and the original case should receive rifampin prophylaxis.

Twenty-two deaths due to H. ***influenzae*** meningitis were recorded in 1985 resulting in a case-fatality ratio of 4.0%. The case-fatality ratio for H. ***influenzae*** meningitis in Texas has steadily declined since 1980 when surveillance of the disease in Texas began. This decline (illustrated in Figure 7) most likely reflects improved reporting of non-fatal cases. Figure 8 compares the numbers of cases and deaths due to ***H. influenzae*** meningitis in Texas from 1980 to 1985. Because the Bureau of Epidemiology receives from the Bureau of Vital Statistics reports of all bacterial meningitis deaths in Texas, the method of collecting mortality data has been consistent from year to year. Morbidity increases in 1982-83 are attributed to increased compliance with voluntary reporting. Increases in 1984-85 are most likely due to the change in the reporting requirement.

Figure 7

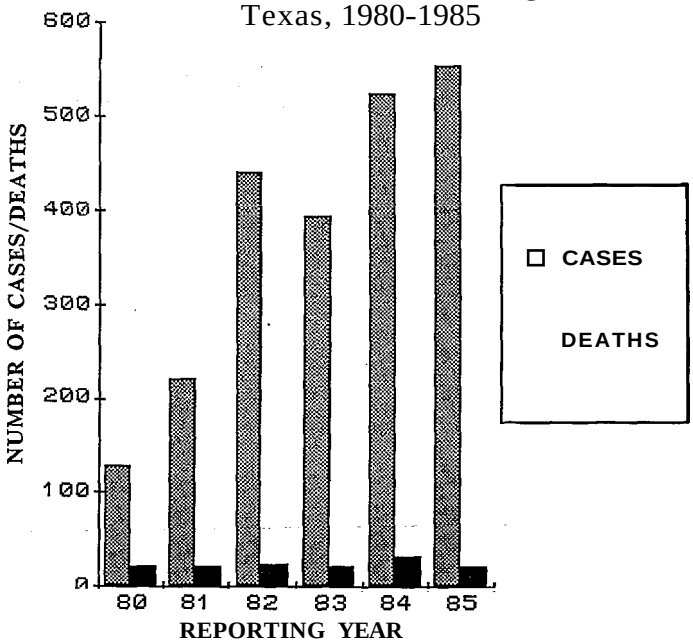
Case-Fatality Ratios of H. influenzae Meningitis
Texas, 1980-1985



Results of the antibiotic sensitivity studies indicated that 27% of the 214 organisms tested in 1985 were resistant to ampicillin. None of the 170 isolates tested were resistant to chloramphenicol. Only 24 organisms were tested for rifampin sensitivity; none were resistant.

Figure 8

Reported Cases and Deaths
due to H. influenzae Meningitis
Texas, 1980-1985



Even though meningitis is the only manifestation of H. ***influenzae*** disease that is required to be reported in Texas, surveillance of other infections is also maintained by the Bureau of Epidemiology. Voluntary reporting of these infections, i.e. cellulitis, epiglottitis, pneumonia, septic arthritis, and sepsis is strongly encouraged. A polysaccharide vaccine against systemic Hib disease was licensed for use in the United States in 1985, and only through voluntary reporting of all invasive H. ***influenzae*** disease can the impact of the vaccine be studied. In addition to the 554 cases of meningitis, 59 other H. ***influenzae*** infections were reported in Texas in 1985. These included septicemia (32 cases), pneumonia (14), epiglottitis (5), cellulitis (4), septic arthritis (3), and pericarditis (1).

MENINGOCOCCAL INFECTIONS

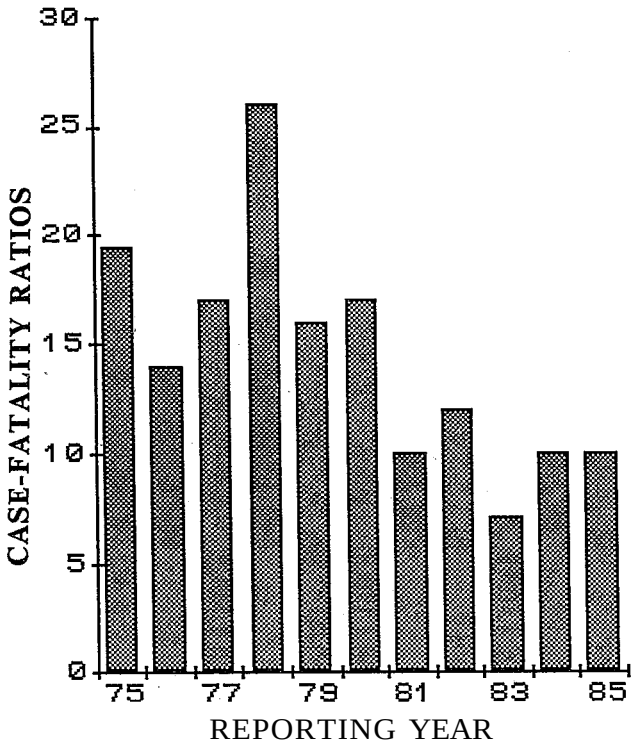
A total of 132 cases of meningococcal infections was reported in Texas in 1985, representing a 27% decrease from the previous year. This decrease resulted in an incidence rate of 0.8 cases per 100,000 population and marked the first year since 1974 that the incidence rate dropped below 1.0.

The 13 deaths reported to the Bureau of Epidemiology produced a case-fatality ratio of 9.8%, continuing a trend which began in 1981

of case-fatality ratios at or below 12% (Figure 9). In contrast to the situation represented by *H. influenzae* meningitis, in which a declining case-fatality ratio is an artifact due to increased reporting of non-fatal cases, the declining case-fatality ratio of meningococcal infections is associated with a decreased number of total cases. The number of fatal cases was derived not only from case reports, but also from reviewing death certificates filed with the Bureau of Vital Statistics; this methodology has remained constant for the past decade.

Figure 9

Case-Fatality Ratios of Meningococcal Infections
Texas, 1975-1985

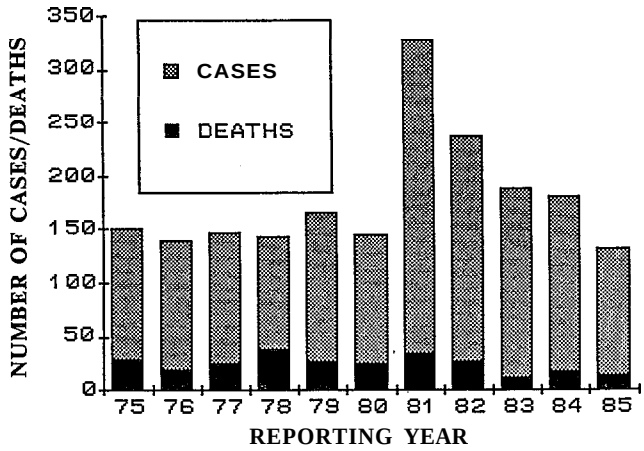


The decline in cases of meningococcal infections in Texas began in 1982 following a period of increased awareness of the disease which resulted from an outbreak of serotype C in Houston in 1981. As illustrated in Figure 10, cases in Texas peaked in 1981 when 327 were reported. At that time, the Texas Department of Health made a concerted effort to maintain the level of reporting of cases and to increase reporting of the serotype of the organism.

Children under the age of four again accounted for approximately half of all reported cases and deaths and had the highest incidence rates: 2.2 cases per 100,000 children between 1-4 years, and 17.7 cases in infants under one year of age.

Figure 10

Reported Cases and Deaths due to Meningococcal Infections Texas, 1975-1985



The source of the isolate was reported for 77 (58%) of the cases in 1985: 44 (57%) were from CSF, 26 (34%) from blood, and 7 (9%) from both CSF and blood. Serotype was reported for 63 (48%) of the organisms. Of these, 2% were A, 73% were B, 19% were C, 5% were W135, and 2% were Y. Antibiotic susceptibility of the organism was indicated on the case investigation form for only a few cases in 1985, and none showed resistantance. Eighteen organisms were tested for ampicillin/penicillin sensitivity, 15 for chloramphenicol, 5 for rifampin, and 3 for sulfacompounds.

Dallas County continued to have the highest incidence rate (1.54 cases per 100,000 population) among major metropolitan areas of the state. Travis County was in the same range with a rate of 1.46 cases. These rates may approximate the true rates as reporting is thought to be complete among the five hospitals in Travis County. The lower rates in other major metropolitan areas such as Tarrant County (1.17), Harris County (1.06), and Bexar County (0.09) may be reporting artifacts.

PNEUMOCOCCAL MENINGITIS

Pneumococcal meningitis, caused by the organism Streptococcus pneumoniae, is a sporadic disease among young infants, the elderly, and in certain high-risk individuals. In 1985, 62% of the 85 cases reported in Texas occurred in these two age groups, i.e., infants under two and in individuals over 60 years of age.

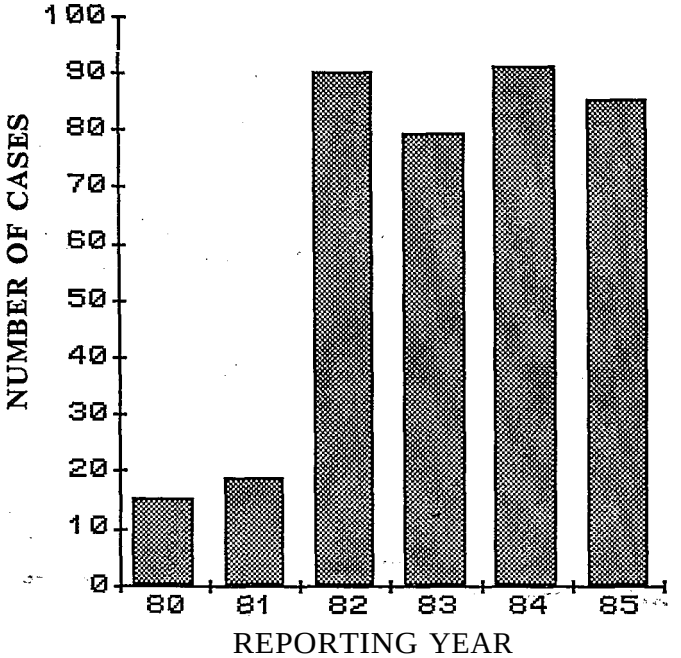
Although *S. pneumoniae* is reported to be the most frequent cause of bacterial pneumonia in man, pneumococcal meningitis occurs less frequently. Unlike pneumococcai meningitis, pneumococcal pneumonia is not a reportable disease, therefore, no Texas incidence data for pneumonia are available. Sixty-six percent of the cases of pneumococcal meningitis in Texas occurred during the winter months--January through March and November through December. This is the same period in which the incidence of pneumococcal pneumonia is reported to be highest in temperate climates.

Pneumococcal meningitis is the third most frequently reported type of bacterial meningitis in Texas and has a high case-fatality ratio. In Texas last year, 14 of the 85 reported cases died for an overall case-fatality ratio of 16.5%. In individuals greater than 60 years of age, the case-fatality ratio rose to 37.5% The case-fatality ratio in infants less than two years of age was only 1.8%, resulting from one death in a 21-month-old baby.

In 1984, there were 93 cases and 21 deaths due to pneumococcal meningitis in Texas for a case-fatality ratio of 22.6%. Individuals 60 years of age and older accounted for the highest case-fatality ratio (53.8%) in any one age group. Although fewer cases of pneumococcal meningitis were reported in Texas in 1985 than in 1984, reporting of the disease has remained constant since 1982 when the reporting initiative began (Figure 11).

Figure 11

Reported Cases of Pneumococcal Meningitis **in** Texas, **1980-1985**



OTHER MENINGITIS

Of the 1109 cases of bacterial meningitis (all types) reported in Texas during 1985, 18% had no etiologic agent specified at the time of report. In addition to H. *influenzae,* N. *meningitidis,* and **S.** *pneumoniae,* which accounted for 70% of all bacterial meningitis in Texas, the other organisms reported as causing meningitis were *Cryptococcus neoformans* (49 cases), *Streptococcus* (27 cases), *Listeria monocytogenes* (24 cases), *Staphylococcus aureus* (9 cases), *Salmonella* (8 cases), *Pseudomonas aeruginosa* (8 cases), *Escherichia coli (6* cases), and *Klebsiella pneumoniae* (4 cases).

BOTULISM

Infant botulism was first recognized as a distinct clinical entity in 1976. Although Texas did record one case of "infant-like" botulism in an adult in 1984, the diagnosis of infant botulism is limited to children under one year of age in whom the illness cannot be traced to any home- or commerically canned foods.

Four cases of infant botulism were reported to the Texas Department of Health in 1985. All of the cases had *Clostridium botulinum* organisms and type **A** toxin demonstrated in the stool. The infants ranged in age from 3-19 weeks at the time they became ill, and all were female. Three of the four infants resided in El Paso, and the fourth case was from Johnson County, south of Fort Worth. It is interesting to note that three of the six cases of infant botulism reported in Texas in 1984 were also from El Paso; these were also all type **A.** All four infants recovered from their illnesses following hospital stays which averaged 51 days.

Even though infant botulism is now the most common form of botulism reported in the United States, it is not a common disease. Only 18 cases have been reported in Texas since 1977 when the disease was first documented in this state. Two other types of botulism which differ epidemiologically and clinically from infant botulism are also recognized--foodborne botulism and wound botulism--though no cases were reported in Texas in 1985.

BRUCELLOSIS

For the second time in three years, Texas experienced an outbreak of brucellosis associated with eating unpasteurized goat cheese made in Mexico. In 1985, an outbreak of nine cases in Laredo represented 20% of the 47 cases reported statewide, and during 1983, an outbreak of 29 cases in Houston represented 35% of the 84 cases reported in Texas.

Of the 47 cases reported statewide in 1985, 35 were Hispanic, 11 were white, and only 1 case was black. The male to female sex ratio of cases was 1.6:1. However, this sex ratio varied markedly between whites and Hispanics. Among whites, the ratio was 10:1 (male:female), whereas the ratio among Hispanics was l:l. These observed differences may be associated with such factors as the Brucella species involved and the type of exposure. The single black case was a male from whom B. suis was isolated. His infection followed a visit to a relative's farm, but a specific exposure incident was not identified.

The diagnosis of brucellosis was confirmed by culture of the organism in 29 cases, and B. *melitensis* was the most common species identified (21 cases); *B.* abortus (5 cases) and B. suis (3 cases) were also identified in 1985.

In Texas, consumption of unpasteurized Mexican goat cheese is the most often reported exposure to brucellosis, and B. *melitensis*, associated with goats, is the principal species isolated from cases. Among the 21 B. *melitensis* cases, 17 (81%) reported that they had eaten goat cheese or Mexican cheese prior to onset of symptoms. All of the B. melitensis cases were Hispanic, and the cases were divided equally between males and females.

Of the eight individuals with positive cultures of either B. abortus or B. suis, all were male, and five reported occupational exposures. These included three cattle ranchers (B. abortus) and two meat-packing plant employees (B. suis).

The Laredo brucellosis outbreak was first recognized in April when seven cases were reported from one hospital. Interestingly, brucellosis was not included among any of the patients' admitting diagnoses which included such divergent illnesses as pelvic inflammatory disease, tuberculosis, cancer, and psychosis. Six of the cases had B. *melitensis* isolated from the blood, and the seventh was confirmed serologically. The seven cases were all Hispanic females, ranging in age from 15 to 67 years. Because of the number of cases identified, the fact that all seven were adult, Hispanic females, and that B. *melitensis* is not usually occupationally acquired, investigation of the apparent outbreak was initiated.

Twenty-four family members of the initial seven cases were serologically tested for brucellosis, however, all were non-reactive indicating that they had not been recently infected. A sero-survey of 296 persons seen at Laredo-Webb County Health Department clinics was also undertaken in an effort to identify additional cases and to establish a background level of reactivity which would indicate previous infection in the community. (It is also important to note that in the previous five years, only four cases of the disease had been reported from Laredo; these occurred in 1983.)

Results of the sero-survey revealed that ten (3%) of the 296 tested were reactive; all were Hispanic females, but only one was considered to be recently infected (single titer $\geq$1:320). This 48-year-old woman was symptomatic at the time. Sera were then collected from her six children, but only one, a 19-year-old son, was considered to be infected (1:160). At the time, he was ill with non-specific symptoms. Both mother and son reported that they had eaten non-commercial white cheese (goat cheese).

The Laredo outbreak investigation identified a total of nine confirmed cases, and nine additional individuals who had serologic evidence of previous infection. All 18 were Hispanic, ranging in age from 15-67 years; only one was male. In contrast, even though all of the cases in the 1983 Houston outbreak were Hispanic, the ages of the infected individuals ranged from 2-92 years, and 41% were male. The Laredo cases were primarily homemakers responsible for food preparation. The outbreak followed Lent, when certain religious groups substitute foods such as cheese for meat. The person who prepared the meals may have eaten more uncooked, infected cheese than did other family members; explaining the unusually high attack rate in females.

CAMPYLOBACTERIOSIS

Campylobacteriosis is an acute bacterial disease characterized by diarrhea, abdominal pain, malaise, fever, nausea, and vomiting. Stools frequently contain blood and mucus. A typhoid-like syndrome, reactive arthritis, febrile convulsions, and meningitis have been described in these patients. Because *Campylobacter* may be responsible for a greater proportion of enteritis than either *Salmonella* or *Shigella* and carries a high potential for food-borne transmission through dairy and poultry products, the disease was made reportable in 1984. Therefore, 1985 marked the first full year of data collection for these infections in Texas.

A total of 666 cases of campylobacteriosis was reported to the Bureau of Epidemiology in 1985 resulting in an incidence rate of 4.1 cases per 100,000 population. Three age groups experienced incidence rates greater than that of Texas; these included infants under one year of age (20.0 cases per 100,000 population); children 1-4 years of age (9.2); and adults 20-29 years of age (5.5). Cases were fairly evenly distributed between males and females, 53% and 47%, respectively. The 552 cases whose race/ethnicity was reported were white (57%), Hispanic (34%), black (7%), and Asian/Pacific Islander or American Indian (1%). Thirty-eight percent of the infections occurred in May through July. No deaths due to campylobacteriosis were reported to the Texas Department of Health in 1985.

The 156 isolates whose species were reported to the Bureau of Epidemiology had the following distribution: C. *jejuni* (93%), *C. fetus* (4%), and *C. coli* (3%). Eight persons had Campylobncter isolated from sites other than stool: blood (5 cases), pericardial fluid (1), joint fluid (1), and wound (1). Five of these eight had infections with *C. fetus*, and five were over 70 years of age. *C.* fetus was identified more frequently in men than in women in 1985. The six patients from whom this organism was isolated ranged in age from 33-88 years, and interestingly, only one was female.

COCCIDIOIDOMYCOSIS

Coccidioidomycosis became reportable in Texas in July 1984. Therefore, 1985 marked the first full year in which data on this disease were collected. Twenty-one cases of coccidioidomycosis were reported to the Texas Department of Health during 1985. In contrast, only four cases of the disease were reported from August through December 1984, following the change in the reporting law.

Coccidioidomycosis is a systemic mycosis which is endemic in arid and semi-arid areas of the Western Hemisphere, including Texas. Disease generally results from a pulmonary infection with Coccidioides immitis, a dimorphic fungus which inhabits soil and becomes airborne through dust particles. Cases range in severity from being asymptomatic to a disseminated, progressive, and sometimes fatal, granulomatous disease. Primary infections typically have a one- to four-.week incubation period, and serologic studies have shown that perhaps only 5% of all primary infections are clinically recognized. A wide variety of domestic and wild mammals can be infected, although the disease is not directly transmissible from man or animals to man.

Coccidioidomycosis is reported to occur much more frequently among males than in females, although the sex ratio of 1985 Texas cases was only 1.3:1, with 12 males and 9 females reported. Cases ranged in age from 11-73 years; median age was 43. The race/ethnicity of the 19 patients for whom this information was reported included 10 Hispanics, 7 whites, and 2 blacks. Cases occurred throughout the year and were scattered throughout South and West Texas, although almost half (48%) were residents of Dallas and Harris counties, with four and six cases, respectively. Only limited information was collected on cases, therefore, possible sources of exposure are unknown.

Two deaths due to coccidioidomycosis were reported to the Bureau of Epidemiology in 1985. These included a 28-year-old, black female from Midland County with disseminated coccidioidomycosis, and a 73-year-old, Hispanic male from Starr County with adult respiratory distress syndrome as a consequence of coccidioidomycosis. This man had been employed as a laborer in a mineral mine.

DENGUE

Dengue is a mosquito-borne viral disease characterized by a sudden onset of fever lasting from 5-7 days, joint and muscle pains,

and sometimes an intense headache and rash. During the last major outbreak of dengue in the continental United States in 1922-23, over 41,000 cases were reported in Texas. But dengue activity declined in subsequent years, and the last outbreak in the U.S. occurred in Texas in 1980 when 61 cases were reported.

Because outbreaks of dengue have been reported throughout South and Central America, including Mexico, and the mosquito vector, ***Aedes*** aegypti, is present in much of Texas, dengue was once again added to the list of reportable diseases in Texas in 1984.

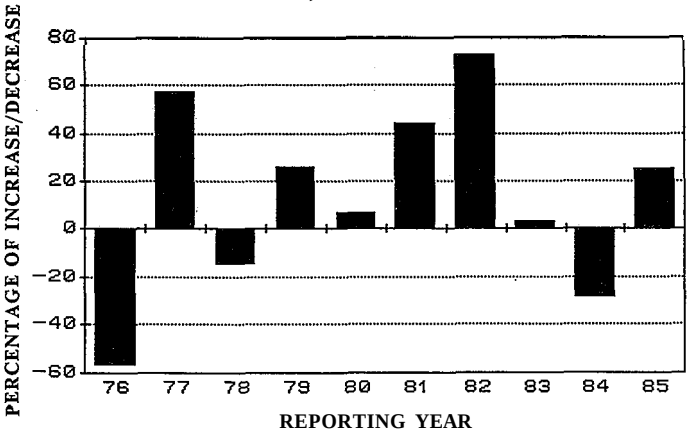
Only one case of the disease was reported in Texas in 1985. The patient was a 45-year-old, Hispanic male who acquired his infection while visiting family in Nicaragua. He became ill approximately nine days after his return to Texas. This case was serologically confirmed by the Texas Department of Health laboratories. Dengue had not been reported in Texas since 1982 when two imported cases were reported.

ENCEPHALITIS

The number of reported cases of encephalitis, like aseptic meningitis, fluctuates widely from one year to the next (Figure 12). However, the yearly variations of the two disease are not correlated. For example, the increases in cases of aseptic meningitis in 1983 and 1985 were associated with increased enterovirus activity. But, because encephalitis is not a usual complication of enterovirus infection, the number of cases of encephalitis in 1983 and 1985 were not equally elevated. The increased number of encephalitis cases in 1985 was associated in part, with the inclusion of reports of Creutzfeldt-Jakob disease (slow virus infections), as well as interaction with the laboratory virus surveillance network.

Figure 12

Percentage **Increase/Decrease** From Previous Year of Reported Cases of Encephalitis Texas, **1976-1985**



The etiologic agent was identified for 25% of the 142 cases of encephalitis reported during 1985 (see Table 1, Aseptic Meningitis); therefore, only these infections will be summarized in detail. Mortality among the 107 cases in whom no etiologic agent was identified was 19%. For four cases, a fatal outcome was the result of another coexisting condition.

HERPES VIRUSES

Twenty cases of encephalitis due to herpes virus were reported in Texas in 1985. These included 14 due to herpes simplex virus (HSV), only one of which was a newborn. Four deaths associated with HSV encephalitis occurred in adults aged 36, 40, 70, and 74 years. Three cases of encephalitis associated with herpes zoster were reported; all were 85 years of age or older, and all were fatal. Three cases of encephalitis secondary to chickenpox occurred between January and March in children under ten years of age; all of the children survived.

ENTEROVIRUSES

Enteroviruses accounted for six cases of encephalitis in 1985. The ages of the five cases on whom this information was provided ranged from 2-39 years. None of these cases died as a result of their illness, and no single enterovirus accounted for more than one case.

ARBOVIRUSES

There was minimal evidence of arboviral activity in Texas during 1985. Only one case of St. Louis encephalitis (SLE) was reported in a 31-year-old male from Ackerly, a small town in Dawson County. A single case of western equine encephalitis was reported in a 27-year-old male from Waxahachie (Ellis County). Both individuals survived without sequelae.

WEE virus was isolated from mosquitoes in Liberty, Fort Bend, Colorado, and Chambers counties (all in PHR 11), Hidalgo County (PHR

8), and Lubbock County (PHR 2) in July, and in Lubbock, Tarrant, and Dallas counties in August. SLE virus was isolated from mosquitoes in Tarrant County in July and in Colorado County in August. SLE antibodies were found in sentinel flocks in Harris County in August and in Cameron and Lubbock counties in August. Antibodies to eastern equine encephalitis (EEE) virus were demonstrated in sentinel chicken flocks in Galveston County in 1985.

Only three equine cases of arboviral encephalitis were reported in Texas in 1985; one case of EEE occurred in Harris County in March, and two cases of WEE were reported in the Texas Panhandle, one in Castro County in July and one in Dallam County in August.

CREUTZFELDT-JAKOB DISEASE

Four cases of slow virus infection were reported in individuals over the age of 63. All of these cases were fatal.

OTHER AGENTS

One adenovirus infection was reported in a 15-year-old female, and a single case of encephalitis associated with aspergillus in a 46-year-old female occurred in 1985; both of these cases survived their illnesses. One case of primary amebic meningoencephalitis, the result of an infection with Naegleria fowleri, occurred in August 1985. This ten-year-old, Hispanic boy from Harris County died as a result of his illness. He was presumably exposed to the organism while swimming in a lake in Liberty County.

HISTOPLASMOSIS

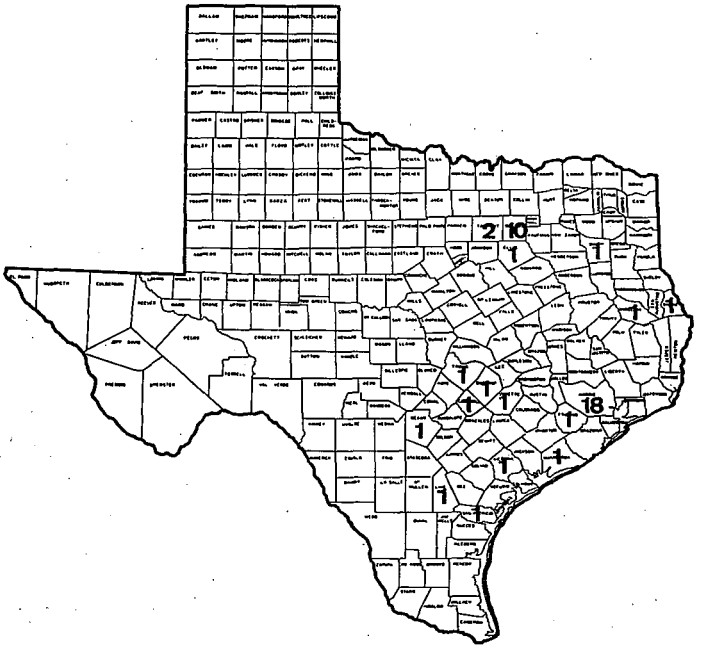
Histoplasmosis was added to the list of reportable diseases in Texas in July 1984; therefore, 1985 was the first complete year for data collection in the state. The 44 cases reported to the Bureau of Epidemiology last year occurred throughout the year with no seasonal variance; one to seven cases had onset during each month.

Differences by sex are not usually observed except in the chronic pulmonary form of the disease which is more common among men. However, 35 of the 44 cases in Texas last year were male. This unusual distribution of cases between sexes can be attributed in part to the fact that for 17 of the reported cases, histoplasmosis was an opportunistic infection associated with acquired immune deficiency syndrome (AIDS). Even if the AIDS-related cases were removed from analysis, almost twice as many men were diagnosed with histoplasmosis than were women.

The responsible organism, Histoplasma *capsulatum*, is ubiquitous in soil. The highest concentrations are found in the Ohio and Mississippi River Valleys but extend west into east Texas; the geographic distribution of Texas cases reflects this (Figure 13). The disease also appears to be more prevalent in non-urban areas. This is particularly obvious if the cases associated with AIDS, which occur predominately in urban centers, are removed from the map: 11 from Harris, 4 from Dallas, and 1 each from Smith and Travis counties.

Figure 13

Reported Cases of Histoplasmosis in Texas
By County of Residence, 1985



The majority of infections are inapparent, however, immunosuppression predisposes toward a chronic course. Age also appears to affect incidence and severity of disease. The youngest Texas case was 18 years, and 16 (70%) of the 23 non-AIDS cases for whom age was known were over 50. The four fatal cases among non-AIDS patients were 64, 68, 80, and 82 years of age.

INFLUENZA AND FLU-LIKE ILLNESS

Influenza is a viral illness characterized by fever, cough, sore throat, chills, and muscle aches. Influenza viruses are spread from person to person through droplets of moisture expelled into the air when a person coughs or sneezes. The influenza season in Texas usually occurs from November through April.

Parainfluenza type 3 virus and respiratory syncytial virus (RSV) are also responsible for respiratory illnesses during the winter months, and frequently cause pneumonia and bronchitis in children under one year of age. A total of 96,477 cases of influenza and flu-like illness was reported to the Texas Department of Health during 1985. The largest numbers of cases were reported in the months of March (26,975) and February (21,989).

Three influenza virus types were present in Texas during 1985. Influenza A(H3N2) circulated primarily in January through early March and represented 97% of the 641 influenza viruses isolated in Texas in 1985. Influenza B and influenza A(H1N1) represented 2.3% and 0.7%, respectively, of the influenza viruses isolated.

Ninety-six percent of influenza A(H3N2) viruses in 1985 were isolated in January and February. Parainfluenza type 3 viruses peaked in March and April, and RSV showed two peaks--January through February and again in October through December. (See Virus Surveillance for additional information pertaining to the temporal distribution of viruses in Texas.)

LEPTOSPIROSIS

Six cases of leptospirosis were reported in Texas in 1985. These included one cluster of three cases in Jasper County and three isolated cases in Hopkins, Bexar, and Harris counties. All of the cases were male and ranged in age from 11-75 years. Five of the cases were white, whereas the sixth case was black.

The one cluster of leptospirosis involved two cousins, 11 and 16 years of age, and an unrelated 17-year-old. Each of these three cases had onset of illness in October and were treated by the same physician. The physician did not suspect leptospirosis at first, but reported that a grandparent of one of the boys had experienced similar symptoms that were diagnosed as leptospirosis. Serologic testing on one of the cousins confirmed the diagnosis. The source of exposure was determined to be a squirrel that the cousins had killed and handled. The third case was diagnosed during the same week after the physician established an exposure history that included hunting and skinning squirrels. This case was also serologically confirmed. All three boys were treated with antibiotics, and none required hospitalization.

In contrast to the October cluster, the three isolated cases had onset in different months--April, July, and November, were exposed in different areas of the state, were hospitalized, and had more traditional sources of infection. These cases included a 17-year-old Hopkins County boy who had been "mud bogging" through creeks on a farm and was exposed to stagnant water; a 34-year-old, black male from Bexar County exposed to a rat he had killed and handled in his home; and a 75-year-old Harris County resident living in what was described as a "filthy, rat-infested environment." One of this elderly man's two dogs died about the time of the patient's illness; the other dog was later destroyed. County health authorities advised the crew hired to clean-up the premises to wear gloves.

Leptospira sp. are widely distributed in nature, with more than 100 species of mammals, reptiles, and amphibians potentially infected. Rats are among the best known carriers of the organism, however, it is unknown whether squirrels are more susceptible to infection than other rodents.

MALARIA

Malaria is a parasitic disease usually transmitted through the bite of an infective, female anopheline mosquito. The disease may also be transmitted by the tranfusion of blood from infected persons and by use of contaminated syringes. Congenital transmission of the disease also occurs.

Ninety-three cases of malaria were reported in Texas during 1985. Eighty-nine (89) cases acquired their infections outside the United States. These incfuded 46 recent immigrants or students from countries where malaria is endemic and 43 non-immigrants who acquired

their infections while on business or vacation. Central America was the geographic origin of malaria for 36 cases, followed by Africa with 22 cases, and India with 17 cases. The three non-imported cases included one congenital case, one transfusion-associated case, and one case classified as introduced autochthonous malaria. The status of one patient was unknown.

The four malarial parasites of humans are Plasmodium falciparurn, P. malariae, P. ovale, and P. vivax; falciparum malaria is generally the most severe infection. In 1985, 61 cases were confirmed as P. vivax, 16 as P. falciparurn, and 7 as P. malariae. Five cases had mixed infections, and the species was not determined for four cases.

Malaria was reported in all age groups with patients ranging in age from 2 days (the congenitally acquired case) to 74 years. The sex ratio of cases was 2:1 (male:female). The majority (69%) of cases were under 30 years of age.

The introduced autochthonous malaria case represented the first autochthonous case of malaria in Texas since 1970 when two cases were identified in Bexar County. The 1985 case was a 26-year-old, black female who had onset of a flu-like illness on June 1, followed on June 8 by a shaking rigor. She was admitted to the hospital on June 10 with an initial diagnosis of an ovarian abscess. A routine blood smear obtained on June 17 revealed P. vivax parasites. She was treated with chloroquine and primaquine and had an uneventful recovery. The patient denied travel outside Dallas County and had reportedly never traveled to a country where malaria is endemic. She denied use of intravenous drugs or knowing anyone who used intravenous drugs. She had never received any blood or blood product by transfusion.

This case resided in an air-conditioned apartment with screened windows. Five additional individuals also lived in the apartment, and none had experienced an illness suggestive of malaria. Serum specimens collected on each of the five household members revealed no detectable antibodies to P. falciparum, P. malariae, P. ovale, or P. vivax by the IFA test. Mosquitoes were collected with light traps near this woman's residence on June 20-24, 1985, and approximately 10% of the 1858 mosquitoes collected were anopheline mosquitoes.

The patient probably acquired malaria in Dallas County, The incubation period for mosquito-transmitted P. vivax malaria ranges from 8-30 days with a mean of 14 days. Exposure to an infective, female anopheline mosquito most likely occurred during the month of May.

OCCUPATIONAL DISEASES

In 1985, a new Texas law requiring the reporting of occupational diseases was passed by the 69th Legislature. As with communicable diseases, case reporting and surveillance of specific occupational disorders will provide better understanding of the occurrence of these conditions in Texas, allow follow-up of cases for the purpose of prevention, and promote awareness of potential public health hazards in the workplace.

The Occupational Disease Reporting Act lists asbestosis, silicosis, and elevated blood lead levels in adults as reportable. This Act also gives the Texas Board of Health rule-making authority to add to the list of required occupational diseases provided these additions are preventable, occupational diseases of well-understood etiology. Late in 1985, the Board added acute occupational pesticide poisoning to the list of reportable occupational diseases and further defined adult elevated blood lead as a blood lead level $\geq 40\,\mu g/dl$ in persons 15 years of age and older. Diagnosed or suspected cases of these diseases are to be reported through the same system used for communicable disease reporting and are handled as confidential medical records.

The four occupational diseases reportable in Texas are distinctly preventable. The procedures and technology necessary to control the hazardous etiologic exposures at the worksite are available and, in fact, are mandated by state and federal. regulations. Silicosis and asbestosis are chronic lung diseases (pneumoconioses) caused by heavy and prolonged exposure to crystalline silica and asbestos, respectively. Uncontrolled exposure to very fine silica, such as silica powder, can also result in acute silicosis. Elevated blood lead in

a worker can occur in numerous occupations where absorption and inhalation of lead are not controlled. Acute pesticide poisoning is a risk for agricultural workers as well as those exposed to pesticides in pesticide manufacture and formulation and pest control.

These four reportable occupational diseases deserve more diagnostic attention and recognition as preventable diseases of public health concern. Case reports and case follow-up and investigations will aid in preventing additional cases.

RABIES IN MAN

The only case of human rabies reported in the United States in 1985 occurred in Texas during the month of May. This case was not, however, diagnosed as rabies until two months after the patient had died. This 19-year-old, Mexican national had lived in Texas approximately six weeks prior to becoming ill; he had no known history of exposure to rabies.

The patient had been in good health until May 2 when he developed nausea, vomiting, and shortness of breath. He was seen in the emergency room of an Abilene hospital where physical examination revealed no abnormalities, and the patient was discharged. He returned to the emergency room several days later because of intensification of breathing difficulties, persistent nausea and vomiting, and high fever. The patient was coherent enough to answer questions, but because he spoke no English, no detailed history of his activities for the past several months was obtained. Tetanus and rabies were considered, but both were ruled out because there was no history of an injury or animal bite. He was admitted to the hospital in acute respiratory distress with a provisional diagnosis of sepsis; aspiration pneumonia was also suspected. The patient was intubated for respiratory distress and treated with broad-spectrum antibiotics. Blood and stool cultures for bacteria were negative.

Two days following hospitalization, the patient had improved enough to have the endotracheal tube removed but his neurologic condition deteriorated, and he became disoriented and combative. On May 13, the patient suffered respiratory arrest and again required intubation. Over the next seven days, his course was marked by progressively deepening coma without focal signs. The patient died on May 20, two weeks after admission.

Since rabies had not been suspected during the patient's illness or at autopsy, tissue specimens were treated routinely. Consequently, microscopic examination of the brain was not undertaken until July. The histologic diagnosis of rabies was supported by a Houston neurologist, and, on July 18, tissue was forwarded to the Centers for Disease Control in Atlanta where the diagnosis of rabies was confirmed by direct fluorescent-antibody examination.

The absence of a history of an animal bite or other exposure to a possibly rabid animal may have been the result of memory loss due to encephalitis or to miscommunication because of the language barrier. Although the source of exposure was unknown, the patient's six-week residency in the United States is compatible with exposure to rabies in Texas or in Mexico.

Skunks are the principal reservoir of animal rabies in West Texas, although rabid bats and foxes play an occasional role in the transmission of the infection in that area of the state. In Mexico, dog bites account for most of the reported cases of human rabies. Over half of the human rabies cases reported nationally since 1980 occurred in individuals who had recently lived in rabies-endemic areas outside the United States.

Epidemiologic investigation of this case revealed 140 hospital employees who had had contact with the patient. Rabies postexposure prophylaxis was made available by the hospital to these employees. Eighty-five (85) workers chose to take the treatment. Postexposure treatment was also offered to relatives and friends of the patient. The cost of the rabies immune globulin and human diploid cell rabies vaccine was approximately $29,000.

REYE SYNDROME

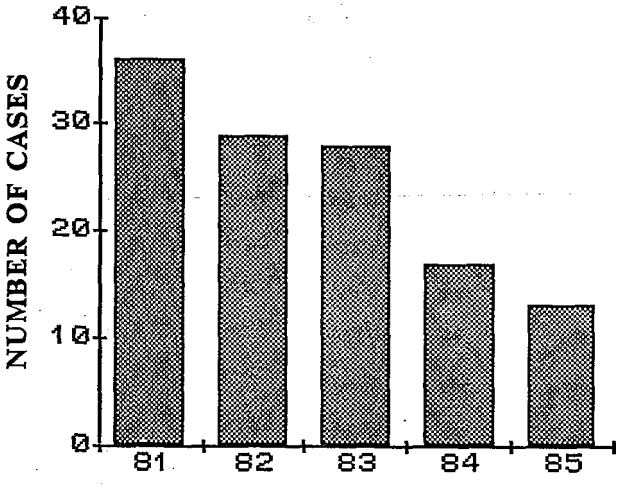
The number of reported cases of Reye syndrome in 1985 continued to decline both in Texas and the nation (Figure 14). However, at least in Texas, the proportion with fatal outcomes increased.

The Bureau of Epidemiology received 23 Reye syndrome (RS) case investigation reports with onset during 1985. Of these, 13 (57%) met the standard CDC case definition. This was the

fewest cases reported during any year since voluntary reporting began in 1981. (Reye syndrome became a reportable disease in Texas in 1983.) Even as the absolute number of cases declined, the case-fatality ratio rose to 62%. Of the 13 cases, eight died. In contrast, the RS case-fatality ratio in the United States was 32% (22/88).

Figure 14

Reported Cases of Reye Syndrome
by Year of Report, Texas, 1981-1985



With regard to other characteristics such as age, sex, ethnicity, month of onset, and antecedent illness, Texas and national cases were similar. The greatest number of cases was under five years of age both in Texas (46%) and nationally (53%). The majority (69%) were female, though neither sex is at increased risk. The overwhelming majority of cases were white, 92% in Texas and 89% nationally, though 57% of Texas' white cases were of Hispanic origin. As in past years, cases clustered in the winter months when respiratory viruses circulate. Among cases that reported an antecedent illness, respiratory symptoms were most common, 60% in Texas and 67% nationally. Varicella was not reported as an antecedent illness among Texas cases during 1985.

As a syndrome, RS has a wide range of clinical expressions, ranging from asymptomatic, clinically unrecognized cases to fulminant, fatal cases. Texas' high case-fatality ratio in 1985 was unexplained by the information collected from case investigation forms. Severe cases may be seen in pediatric referral centers where RS might be more likely to be diagnosed and reported. In addition, the Bureau of Epidemiology receives copies of all death certificates indicating RS, though all of these cases were also reported by another method.

Ages of the cases ranged from three months to 20 years, but the deaths occurred in the youngest cases. Five cases survived, though the two oldest, aged 14 and 20 years, suffered mild, residual neurologic damage. Short-term follow-up of the 20-year-old revealed continued improvement with no major problems anticipated.

Only limited information is available on Texas cases regarding the use of salicylates prior to the onset of RS. However, the pilot study undertaken by the CDC found that children who were given aspirin for symptoms of influenza or chickenpox had as much as a 25 times greater risk of developing RS than did children who were not given aspirin. Two Texas pediatric referral centers participated in the pilot study, and three are participating in a more extensive follow-up study.

RICKETTSIAL DISEASES

ENDEMIC TYPHUS

Endemic typhus (murine, or flea-borne typhus) is caused by Rickettsia typhi, which is usually transmitted by the feces of an infected rat flea. The rat flea defecates on the human host during the feeding process, and the scratching associated with itching at the bite facilitates the inoculation of infected feces into the bite site.

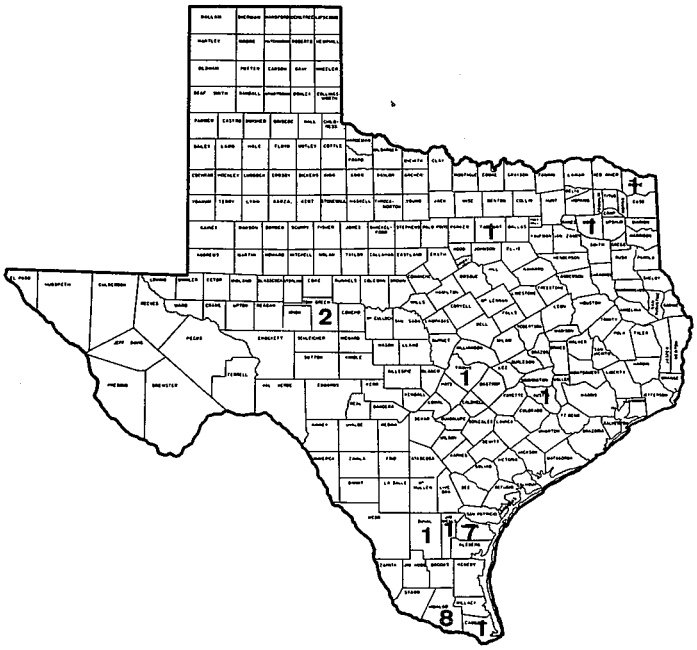
In 1985, 25 confirmed cases of endemic typhus were reported in Texas. This represents a 32% decrease from the 37 cases reported in 1984 and a 46% decrease from the 46 cases reported in 1983. The counties of residence of the cases in 1985 are presented in Figure 15, and as in previous years, the majority of the cases resided in South Texas. However, isolated cases were reported from rural areas throughout Texas.

The distribution of cases between sexes included 14 males and 11 females. Cases ranged in age from 8-81 years. The majority

(56%) of the cases were 40 years of age or older, and the majority (again, 56%) reported onset of symptoms during May or June.

Figure 15

Reported Cases of Endemic Typhus in Texas
by County of Residence, **1985**



Clinical symptoms were noted with the following frequencies for the 25 cases: fever, 91%; headache, 74%; rash, 48%; malaise, 35%; and myalgia, 35%. The associated rash was most frequently observed on the trunk (100%), followed by the arms (56%), legs (56%), and face (22%). The rash appeared, on the average, six days after onset of fever, ranging from 2-11 days. An 81-year-old, Nueces County female died from endemic typhus, resulting in a case-fatality ratio of 4%.

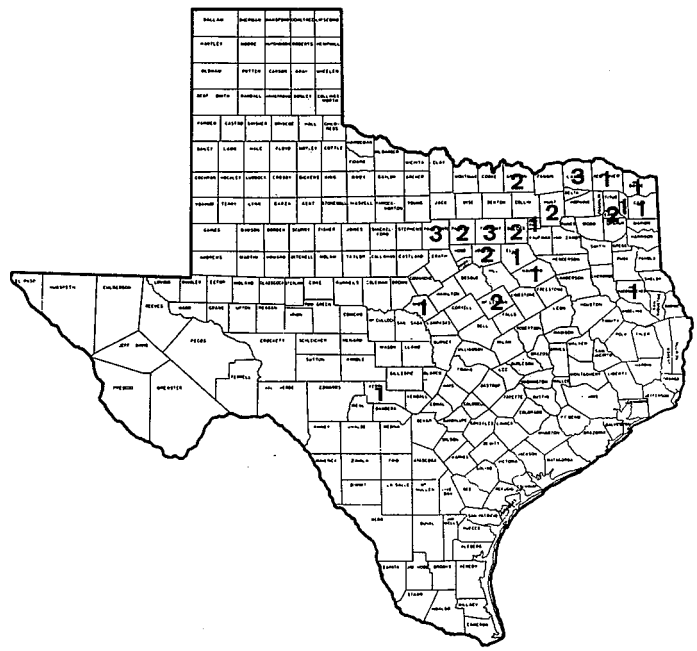
ROCKY MOUNTAIN SPOTTED FEVER

Rocky Mountain spotted fever (RMSF) is caused by ***Rickettsia rickettsii.*** This organism is primarily a parasite of ticks and is passed to tick offspring by transovarial transmission. Man contracts RMSF either through the bite of an infected tick or by contamination of the skin with crushed tissues or feces of infected ticks.

During 1985, 33 cases of RMSF were reported in Texas, a 38% decrease from the 53 cases reported in 1984 and a 69% decrease from the 108 cases reported in 1983. As in previous years, the majority of cases resided in the north central and eastern areas of the state (Figure 16), resulting in incidence rates of 0.5 and 1.0 per 100,000 population in Public Health Regions 5 and 7, respectively. In contrast, the incidence rate of RMSF for the state as a whole was 0.2 cases per 100,000 population. No deaths due to RMSF were reported to the Bureau of Epidemiology in 1985.

Figure 16

Reported Cases of Rocky Mountain
Spotted Fever in Texas
by County of Residence, **1985**



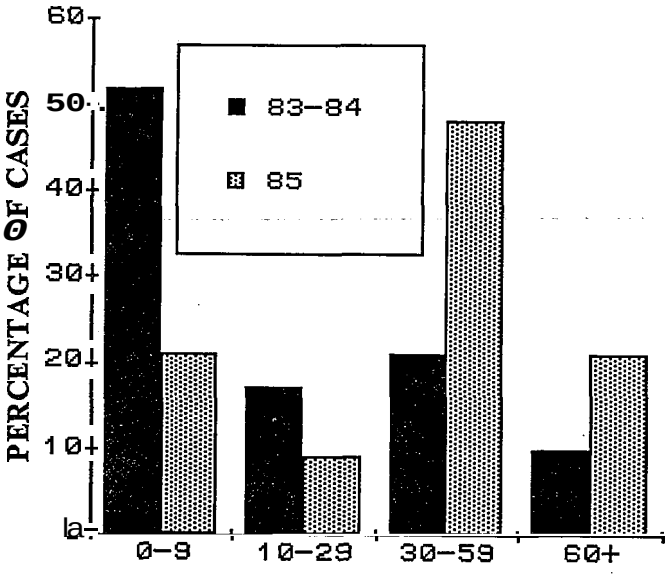
Usually 50% of RMSF cases reported in Texas in past years were under ten years of age with males outnumbering females two to one. In 1985, the sex ratio did not vary, 22 cases were males, and eleven were females. However, only 21% were under ten years of age. Figure 17 illustrates the distribution of Texas cases by age group for 1983-85. The overwhelming majority (94%) of cases in Texas last year were white; blacks accounted for only two cases.

Eighty-two percent had onset during the period April-September. Clinical symptoms of the 33 cases were noted with the following frequencies: fever, 100%; headache, 72%; myalgia, 69%; rash, 65%; malaise, 41%; and lymphadenopathy, 31%. The associated rash was most frequently observed on the legs (83%), followed by the trunk (78%), and the arms

(67%). A generalized rash appearing on the trunk, arms, legs, face, soles, and palms was observed in two cases (11%) with a rash. The rash appeared, on the average, four days after onset of fever, ranging from 0-16 days. Three cases developed their rashes on the same day as the onset of fever.

Figure 17

Distribution of Cases of Rocky Mountain Spotted Fever in Texas by Age Group, 1983-85



The diagnosis of RMSF was confirmed in all cases. Twenty-four (73%) of the cases were confirmed by the indirect fluorescent antibody test (IFA), seven (21%) were confirmed by acute blood inoculation into test animals (Microtus), and two (6%) cases were confirmed by fluorescent antibody staining of tissue.

SALMONELLOSIS

Salmonella species cause an acute gastroenteritis which is usually self-limited. Infrequently, the infection develops into enteric fever, meningitis, or a focal infection. A very small percentage of patients may become chronic carriers of the organism for more than a year after the initial infection. Antibiotic therapy of uncomplicated gastroenteritis is usually ineffective, may lead to selection of drug-resistant strains, and can predispose to the carrier state.

In 1985, 2442 Salmonella infections (exclusive of S. typhi) were reported to the Texas Department of Health resulting in an incidence rate of 15.1 cases per 100,000 population. The incidence peaked during the third quarter of the year with 979 cases reported in that time period (July-September). Cases were fairly evenly distributed between males and females with 53% and 47% of the cases, respectively. Children under five years of age accounted for 42% of the cases and experienced the highest age-specific incidence rates in Texas. A total of 561 cases of salmonellosis was reported in infants under one year of age; this age group had the highest incidence rate at 216.1 cases per 100,000, and the rate in children 1-4 years of age was 42.1. All other age groups experienced rates less than that of the state rate. The race/ethnicity of the patient was identified for 1799 (74%) of the cases and included whites (52%), Hispanics (34%), blacks (12%), and Asians and American Indians (2% combined).

Most deaths resulting from salmonellosis occur in very young infants or in older adults. The five deaths reported in Texas in 1985 included two infants (one month and three months of age) and three elderly adults (71,72, and 85 years of age). Of these five, Salmonella was known to have been isolated from the blood of one patient and bronchial washings of another.

Serotyping was completed on 1726 (71%) of the reported Salmonella isolates, and 82 serotypes were identified. The ten most frequently isolated serotypes are listed in Table 2.

Table 2

Reported Salmonella Serotypes
Texas - 1985

Serotype (Species enteritidis)	# of Isolates	% of Isolates
typhimurium	388	22 %
newport	171	10
heidelberg	156	9
enteritidis	117	7
Group B*	113	7
javiana	74	4
Group C*	61	4
montevideo	54	3
infantis	47	3
agona	41	2
72 other serotypes	504	29
TOTAL	1726	100 %

* Isolates not submitted for further differentiation

SEXUALLY TRANSMITTED DISEASES

During 1985, 66,728 cases of gonorrhea and 10,745 cases of syphilis were reported in Texas. These figures reflect only the incidence of disease in the civilian population of the state.

GONORRHEA

Although there was a slight increase (1%) in the number of cases of gonorrhea reported in Texas in 1985, the incidence rate of 414 cases per 100,000 population reflected a continuing trend of decreasing morbidity which began seven years ago. Seventy-three percent of the gonorrhea cases in Texas last year were reported in the seven major metropolitan areas of the state which comprise 49% of the Texas population. In each of these areas, the incidence of disease was highest among individuals between 15-29 years of age (Table 3). This age group accounted for approximately 83% of the gonorrhea morbidity in each of these areas.

Table 3

Reported Cases of Gonorrhea per 100,000 Population in Selected Counties in Texas, 1985

Age Group	Bexar	Dallas	El Paso	Harris	Nueces	Tarrant	Travis	TEXAS
<9 yrs	5.3	10.8	0.9	9.1	0.0	8.2	2.8	5.6
10-14	46.7	127.0	7.9	79.4	12.5	73.8	108.7	48.6
15-19	877.3	2637.8	1345.2	1818.6	508.0	1833.5	1880.3	1161.8
20-29	1109.0	2826.0	1657.2	1685.3	1131.9	1925.3	2063.8	1390.6
30-39	295.3	669.9	502.4	434.2	283.5	467.8	594.5	332.9
40-49	68.4	182.1	78.5	112.3	74.4	123.0	140.3	79.9
50-59	18.2	32.1	24.1	35.1	16.1	31.3	62.0	21.5
60+	2.2	15.2	5.2	9.8	8.3	8.3	2.0	5.4
TOTAL	332.3	916.5	612.4	688.8	292.9	609.7	795.4	407.2

.Gonococcal Pelvic Inflammatory Disease

The Sexually Transmitted Disease Control Division maintains an aggressive program of follow-up and intervention to prevent gonococcal pelvic inflammatory disease (GPID), the most common complication of gonorrhea infection in women. Reports of GPID increased significantly (26%) in 1985. Many of the 2202 Texas women with GPID last year required hospitalization at a tremendous economic cost to both the patient and to the health care delivery system. As a result of GPID, some women experience ectopic pregnancy, sterility, and other recurrent infections.

Penicillinase-producing *Neiserria gonorrhoeae*

The first Texas case of penicillinase-producing N. ***gonorrhoeae*** (PPNG) was identified in 1976. As a result, local health department and affiliated laboratories in Texas now test all N-***gonorrhoeae*** isolates for beta-lactamase (penicillinase) production. Cases of PPNG in Texas increased to 197 cases in 1985, up 55% from the 127 cases reported in 1984. The greatest increase was noted in the Houston/Harris County area.

Chromosomally Mediated Resistant *Neisseria gonorrhoeae*

A new, resistant strain of chromosomally mediated, penicillin resistant gonorrhea was first reported in Texas in August 1985. In addition to being resistant to penicillin, these strains are often resistant to other antibiotics, including tetracycline and erythromycin. The emergence of CMRNG is the result of naturally occurring genetic mutations coupled with antibiotic exposure which eliminates sensitive organisms.

During the last five months of 1985, 20 cases of CMRNG were reported in Texas. More than half of these cases were reported from the San Antonio (seven cases) and Dallas (five cases) areas. An additional eight cases were scattered among Public Health Regions 4, 6, and 8.

SYPHILIS

Of the 10,745 cases of syphilis reported statewide in 1985, 4610 cases (43%) were classified as primary or secondary syphilis (infectious syphilis). These cases reflected a 10% decrease from the 5136 cases reported in 1984, and resulted in an incidence rate for Texas of 28.6 cases per 100,000 population. Seventy-seven percent of infectious syphilis was reported in the seven major metropolitan areas, and the disease was most prevalent in persons 15-29 years of age (Table 4). This age group accounted for 64% of the primary and secondary syphilis reported from these seven areas.

There were 4370 cases of early latent (less than one year's duration) syphilis reported in 1985; the geographic and age distributions were similar to those of primary and secondary syphilis. The remaining cases were classified as late syphilis (1669 cases) and congenital syphilis (96 cases).

Table 4

Reported Cases of Infectious Syphilis* per 100,000 Population in Selected Counties in Texas, 1985

Age Group	Bexar	Dallas	El Paso	Harris	Nueces	Tarrant	Travis	TEXAS
<9 yrs	0.5	0.4	0.0	0.2	0.0	0.7	1.4	0.2
10-14	8.9	4.1	2.0	1.9	0.0	2.9	0.0	2.3
15-19	48.1	95.3	31.1	47.5	40.0	40.0	52.2	37.3
20-29	108.4	214.0	69.9	98.4	100.8	113.2	92.8	86.6
30-39	49.5	107.5	42.0	50.5	42.2	51.2	42.6	42.6
40-49	18.2	44.6	27.9	23.6	30.4	35.3	11.9	17.6
50-59	13.9	22.5	21.9	17.7	8.1	16.2	14.1	10.2
60+	0.0	8.6	3.5	5.5	5.5	2.5	4.0	2.2
TOTAL	34.7	76.9	26.8	38.0	31.8	39.2	37.4	28.6

* Primary and secondary syphilis only.

Congenital Syphilis

Pregnant women with untreated syphilis are at high risk of adverse pregnancy outcomes. Early syphilis in pregnancy, left untreated, may result in any of the following: a late abortion, after the fourth month of pregnancy; fetal wastage and stillbirth; a child born with manifestations of early congenital syphilis; a preterm infant; or a child that appears well, but has a reactive serology. Mortality remains high for an unborn child infected with congenital syphilis. Previous reports have shown that 40% of affected pregnancies result in loss by spontaneous abortion, stillbirth, or perinatal death.

During 1985, 96 congenital syphilis infections were reported among newborns. Ninety-four were single deliveries; one was a twin. Of the 96 cases reported, 53 were live births; however, three of these infants later died. There were 43 stillborn infants whose deaths were related to syphilis infections in their mothers.

The typical mother who delivered an infant with congenital syphilis was young (80% were under 25 years of age), unmarried (68%), and Hispanic (50%) or black (35%). Two percent of the total reported were among native Americans, and the remainder were non-Hispanic whites (13%). Forty-five percent of the mothers received no prenatal care during their pregnancy. However, 65% of those with prenatal care did not seek care until after the beginning of the second trimester. For those who did have a first trimester visit with a negative serologic test for syphilis, few had a repeat test in the third trimester.

Early latent syphilis was the most common syphilis diagnosis in the pregnant mothers of these congenital cases. Sixty-one (64%) of the pregnant women were reported' with this diagnosis. Twenty-eight (30%) were diagnosed with secondary syphilis. No pregnant women were diagnosed with primary syphilis. Five mothers were reported with late latent and one with asypmptomatic neurosyphilis.

Prenatal serologic syphilis testing identified and lead to treatment of over 540 women prior to delivery in 1985, potentially preventing hundreds of babies from developing congenital syphilis. Fifteen of these women who received recommended doses of penicillin prior to delivery delivered infants presumably infected with syphilis. There were two probable treatment failures in women treated with erythromycin. One of these cases resulted in a stillborn infant in whom there was autopsy evidence of fetal syphilis infection.

Prematurity and low birth weight continued to be observed among infants infected with syphilis. Sixty-eight percent of the congenital syphilis cases in Texas in 1985 weighed less than 2500 grams'(5.5 lbs) at birth. Seventy-four percent were delivered before completing 37 weeks gestation. This, coupled with low birth weight, contributed to the three infant deaths. Two of the infants died in the neonatal period and the other within six months of birth.

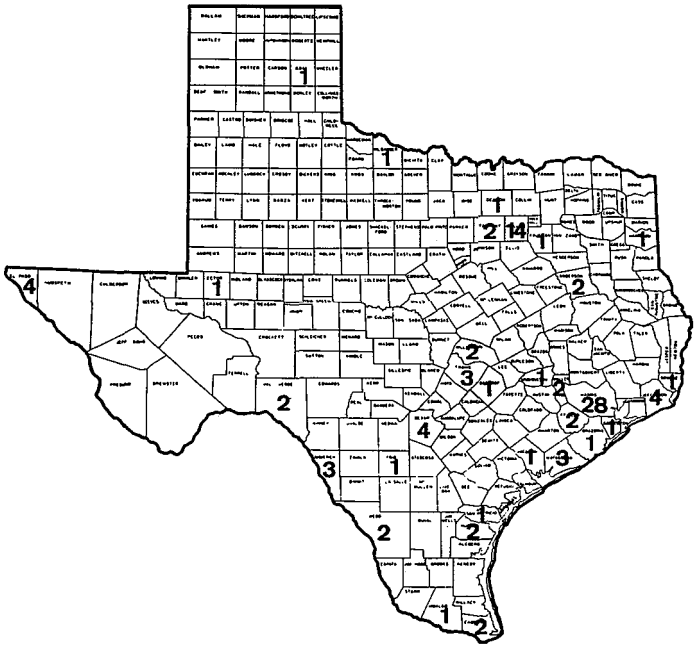
Harris County led the state with the reporting of 28 cases of congenital syphilis (see Figure 18) . Dallas County reported 14 cases, and Bexar, El Paso, and Jefferson counties reported four cases each. Several areas, notably Public Health Region 11 (excluding Harris County) and Public Health Region 8, reported increased numbers of cases in 1985; both reported nine cases.

Lack of early prenatal care continued to be an important factor leading to the increased occurrence of congenital syphilis. State law which now requires syphilis serologic testing in both the prenatal and perinatal period undoubtedly has resulted in the identification of infants with positive serologies at birth, with the resultant follow-up leading to diagnosis and treatment. However, the incidence of syphilis in the community cannot be ignored. Whereas the number of syphilis cases reported in Texas decreased in 1985, the decrease may have resulted from the fear of AIDS and affected the incidence of syphilis in the homosexual community more than in the heterosexual community. Increased and

improved surveillance by STD programs in local areas has also contributed to the identification and reporting of cases of congenital syphilis.

Figure 18

Reported Cases of Congenital Syphilis in Texas by County of Residence of Mother, 1985



SHIGELLOSIS

Shigellosis is an acute bacterial infection caused by one of four organisms: *Shigella* boydii, S. dysenteriae, S. flexneri, or S. sonnei. Symptoms include diarrhea, fever, cramps, nausea, and sometimes vomiting. The severity of illness may be determined by the patient's age and nutritional status, the size of the infecting dose, and the serotype of the organism. Infections are easily spread from **person-to-person,** and occur primarily in children.

In 1985, 1718 cases of shigellosis were reported in Texas, resulting in an incidence rate of 10.7 cases per 100,000 population. The majority (56%) of cases were reported in children under ten years of age. As in previous years, the largest number of cases occurred in the 1-4 year age group. This age group experienced the highest incidence rate in Texas in 1985 at 57.5 cases per 100,000. The rate in infants under one year of age was 25.0 cases, and 20.1 cases in children 5-9 years of age. All other age groups had rates less than that of the state.

Hispanics overall had an incidence rate twice that of the state--21.6 cases per 100,000 population, with the highest rate occurring in children between 1-4 years of age **(98.3).** For comparison, the incidence rate for whites in all age groups was 4.6 cases and 19.3 for white children 1-4 years of age; the incidence rate for blacks was 11.7 overall and 73.3 in black children 1-4 years of age (Table 5). American Indians and Asians combined represented less than 1% of the total cases. **Race/ethnicity** was not specified for 213 (12%) of the cases.

Table 5

Reported Cases of Shigellosis per **100,000** Population by Age Group and **Race/Ethnicity,** Texas - **1985**

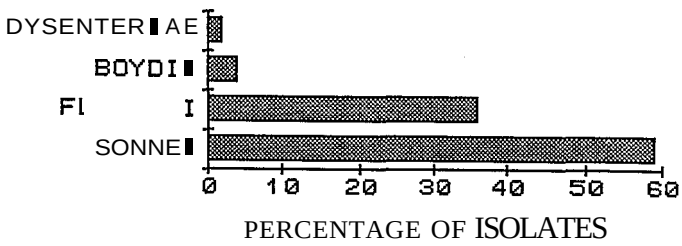
Age Group	WHITE Cases	WHITE Rate	HISPANIC Cases	HISPANIC Rate	BLACK Cases	BLACK Rate	TOTAL * Cases	TOTAL * Rate
< 1	8	5.6	41	49.7	12	36.2	65	25.0
1-4	116	19.3	343	98.3	107	73.4	630	57.5
5-9	67	8.9	142	33.6	33	18.0	273	20.1
10-14	18	2.4	49	13.0	7	4.1	80	6.2
15-19	19	2.3	18	4.8	7	3.8	47	3.4
20-29	104	5.7	66	9.8	32	9.0	230	8.1
30-39	92	5.3	35	6.6	7	2.5	152	5.9
40-49	33	2.6	17	5.3	5	2.9	64	3.6
50-59	8	0.77	17	7.5	2	1.5	30	2.2
60+	16	0.95	28	10.4	6	2.9	53	2.5
UNK	8	-	28	-	1	-	94	-
TOTAL *	489	4.6	784	21.6	219	11.7	1718	10.7

*** Includes other racial groups and those reported as unknown.**

Serotypes were available for 60% of all 1985 shigellosis cases. In Texas, 59% of these 1030 cases were found to be caused by S. sonnei, 36% were S. flexneri, 4% were S. boydii, and 2% were S. dysenteriae (Figure 19).

Figure 19

Distribution of Shigella Isolates
Texas, 1985



Of the reported 1985 shigellosis cases, five deaths occurred for a case-fatality ratio of 0.3%. These deaths were in children aged 3 (two cases) 4, 6, and 11 years (one case each). Four of the five children who died were Hispanic. Serotypes were available for only three of the *Shigella* infections resulting in death, one each of S. flexneri, S. *boydii*, and S. dysenteriae.

Two outbreaks of trimethoprim-sulfamethoxazole (TMP-SMX) resistant S. sonnei occurred in October and November 1985 in East Texas. The first outbreak occurred in a day-care center in Diboll (Angelina County). Upon investigation, it was determined that a total of 15 (26%) of 58 children attending the center and 5 (3%) of 167 family contacts met the case definition. Four of the five cases in family contacts required hospitalization, however, none of the 15 infected children was hospitalized.

The dates of onset of symptoms in this outbreak ranged from October 11 through November 6. The pattern of onset dates suggested two clusters. Five cases had onset of symptoms on October 15 or 16, and six cases had onset November 1-3. Attack rates varied among classrooms and ranged from a high of 60% in the toddlers' classroom to a low of 7% in the four-year-olds' classroom.

The second outbreak occurred in kindergarten students and their family members in Palestine (Anderson County) beginning in late October and continuing through late November. A total of 20 cases was identified. No connection between the day-care center in Diboll and the kindergarten class in Palestine was identified.

TOXIC-SHOCK SYNDROME

Prior to July 1984, when toxic-shock syndrome (TSS) became a reportable disease in Texas, cases were reported to the Bureau of Epidemiology on a voluntary basis only. In 1985, 27 confirmed cases of TSS were reported in the state, compared to 22 cases in 1984, 29 in 1983, 24 in 1982, 30 in 1981, and 28 in 1980. The percentage of reported cases in women who used tampons has steadily decreased from 93% in 1980 to 56% in 1985. More cases are being reported both in women who were not wearing tampons at the time of onset and in men. The majority of non-tampon associated cases occurred after surgery or secondary to an infected wound (see Table 6). Cases occurred in 22 (81%) females and 5 (19%) males.

Table 6

Events Associated with and Characteristics of Non-tampon Associated Toxic Shock Syndrome in Texas, 1985

Number of Cases	Associated Event	Age	Sex	Incubation Period
4	Surgery			
	Breast biopsy	59	F	3 days
	C-section	19	F	13 days
	Shoulder	21	M	1 day
	Vasectomy	37	M	1 day
3	Wounds			*
	Cellulitis (toe)	1	M	
	Lesion (thigh)	27	F	*
	Hemihypertrophy (leg).	22	M	*
1	Contraceptive Sponge	19	F	1 day
1	Sinus Infection	35	F	*
1	Breast Infection post C-section	30	F	15 days
1	Pneumonia/lip ulcer	5	F	*
1	Upper Respiratory Tract Infection	8	M	*

* Unable to quantify/unknown

The 1985 Texas cases of TSS associated with tampon usage ranged in age from. 13-33 years; mean age was 21. Ages of non-tampon related cases ranged from 1-59 years with a mean of 22 years. Two deaths due to TSS occurred in 1985 resulting in a case-fatality ratio of 7%. Neither death was related to tampon use. One death was a 22-year-old, black male who had had hemihypertrophy of his right leg since birth. His TSS symptoms were attributed to an infection in this leg although no *Staphylococcus* aureus was isolated. The second death occurred in a five-year-old, black female who had a history of cyclic neutropenia. She was admitted to the hospital with a white blood cell count of 1100 with no neutrophils present. S. aureus was isolated from a lip ulcer and her throat. A chest x-ray indicated diffuse bilateral pulmonary infiltrates suggesting pneumonia. The patient died one month later.

S. aureus was isolated from 78% of the TSS cases. Organ systems involved were: gastrointestinal (96%), mucous membrane (89%), muscular (81%), renal (59%), hepatic (41%), central nervous system (30%), and hematologic (15%). Besides the involvement of three or more of the above systems, the cases also had fever (>102°F), hypotension (systolic blood pressure <90 mm Hg, syncope, or orthostatic hypotension), and a rash with subsequent desquamation.

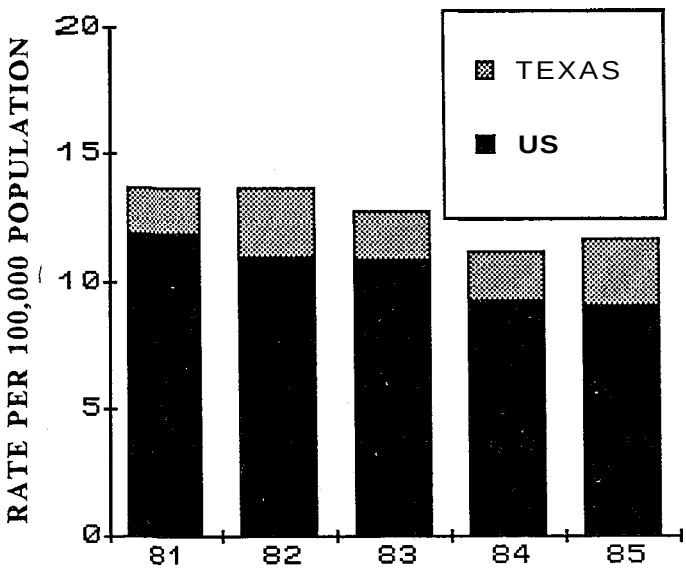
It is not known whether the decreasing percentage of tampon-related TSS cases is due increased recognition of non-tampon associated cases or changes in reporting or tampon usage.

TUBERCULOSIS

The number of cases of tuberculosis reported in Texas in 1985 increased 7% from the 1762 cases in 1984. The 1891 cases reported resulted in an incidence rate of 11.7 cases per 100,000 population, up slightly from the 11.2 rate in 1984. One-half of the cases occurred in the seven major metropolitan areas of the state, and the city of Houston accounted for 26% of the state's morbidity; Dallas was next with 12%. The remaining five areas contributed 11% to the tuberculosis morbidity in Texas. The incidence rate of tuberculosis in Texas is generally higher than in the United States (Figure 20).

Figure 20

Reported Cases of Tuberculosis per **100,000** Population in Texas and the United States **1981-1985**



During 1985, 85 cases of tuberculosis were reported in children under five years of age. This 35% increase in cases from the 63 reported in 1984 occurred despite the tuberculosis program's efforts to interrupt the transmission of infection. Houston reported 37% of the cases in children under five years of age.

Tuberculosis is a systemic disease with diverse manifestations. Definitive diagnosis requires the demonstration of ***Mycobacterium tuberculosis*** in culture from tissues or secretions. During 1985, 1343 (83%) cases were confirmed through positive culture examinations. Diagnoses of the remaining cases were based on microscopy, chest x-rays, and other clinical evidence. Although the site of disease involvement is usually the lungs, extrapulmonary tuberculosis represents an almost constant 12-14% of the cases reported annually in Texas and about 15% nationally. In 1985, 270 Texas cases (14%) were extrapulmonary, and in 4% of the cases, both the lungs and other sites were affected.

Asians and Pacific Islanders accounted for 8% (141 cases) in 1985, indicating that the reservoir of potential cases still exists in this particular population. The infection level for refugees who comprise a large portion of this population group has been reported as high as 65% in some areas of the United States. In Texas, infection rates of 30-40% have been reported from areas where refugee health screening was conducted in 1985. The incidence in this population has been estimated by the Centers for Disease Control to be as high as 1500 cases per 100,000 population at the time of US entry or shortly thereafter.

Screening of the general population for tuberculosis is an inefficient method of finding infection and disease; however, screening of selected sub-populations such as refugees is indicated. In addition, screening in certain facilities where transmission is likely to occur, such as penal institutions and nursing homes, is advised.

TULAREMIA

Eight cases of tularemia were reported in Texas residents during 1985. Six of the eight cases acquired their infections in Texas; two cases were acquired in Arkansas. The dates of onset of illness corresponded with the sources of exposure. Tick bites were reported for six of the seven insect bite exposures; these cases occurred between late March and early September. The eighth case had onset in November, following a hunting trip during which he skinned two rabbits.

Seven cases were male, between 11-70 years of age; median age was 49. The distribution of male cases by race/ethnicity included four

whites, two Hispanics, and one black. Three of the men lived in rural areas and reported that they had probably been exposed in their home environment; these men were 50-70 years of age. The two cases exposed in Arkansas included a 28-year-old resident of Dallas County who had been camping and hiking, and a 20-year-old from Brooks Air Force Base (San Antonio) who had been on survival training. An 11-year-old, Amarillo resident was bitten by a "flying insect" at his grandparents' house in Midland County. The rabbit hunter was a 49-year-old resident of Terry County. He reportedly had a finger injury prior to skinning two rabbits while hunting in Reagan County.

The female case was a 21-year-old, white resident of rural Upshur County. She reported several tick bites received while building a fence on a cattle ranch.

Five cases were confirmed serologically, and three cases had ***Francisella tularensis*** isolated from blood (two cases) or lymph node biopsy (one case). Five cases were hospitalized. All eight were treated with antibiotics, and all recovered.

TYPHOID FEVER

Thirty-two (32) cases of typhoid fever were reported from 14 counties in Texas in 1985. This reflects only a slight increase (7%) from the 30 cases reported in 1984. The dates of onset of symptoms for the cases showed no temporal clustering, and no deaths associated with typhoid fever were reported. The distribution of cases by sex included 15 males and 17 females. The cases ranged in age from one to 65 years; mean age was 20. Eighty-one percent of the cases were 30 years of age or younger.

Typhoid fever is an acute febrile disease caused by ***Salmonella typhi.*** The usual source of infection is through ingestion of food or water contaminated directly or indirectly with human excreta from a patient with typhoid fever or from a carrier of S. ***typhi.*** A case of typhoid fever is confirmed by the isolation of ***S. typhi*** from the blood, feces, urine, or tissue.

Eighteen (56%) of the typhoid fever cases in 1985 were exposed to ***S. typhi*** outside the United States and are, therefore, classified as imported cases. Mexico was the country of exposure for 12 of these cases- Six cases (three clusters of two cases each) acquired their infections in the United States from previously known or newly discovered S. ***typhi*** carriers. The source of infection of the other eight cases was unknown.

VACCINE PREVENTABLE DISEASES

MEASLES

Measles is a viral illness which is normally characterized by a high fever ($\geq$101°), a maculopapular rash of more than three days duration, cough, coryza, and conjunctivitis. Complications include otitis media, pneumonia, encephalitis, and death.

Much effort has been expended in recent years to eliminate measles in Texas and in the United States; the disease, however, has continued to occur. The highly infectious nature of the virus and the efficacy of the measles vaccine (90-95%) make elimination nearly impossible when one considers today's mobile society. Chains of transmission are no longer confined to a single community. Today, transmission of the virus occurs on national and international levels.

During 1985, there were 450 confirmed cases of measles reported in Texas, reflecting a 30% reduction from the 642 cases reported in 1984. The majority of cases occurred during outbreaks in the Lower Rio Grande Valley, Corpus Christi, and Port Arthur. These outbreaks primarily affected junior and senior high school students and were probably associated although a definite chain of transmission was not established.

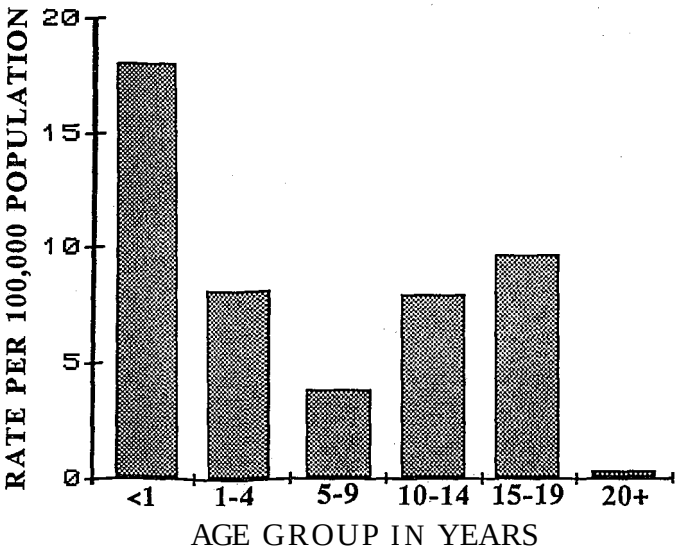
Importation of measles continued to be a major concern in Texas, not only from Mexico, but from other countries and states. In 1985, 18 infections were traced to sources outside of Texas, 14 from Mexico, 2 from Colorado, and 1 case each from England and Florida. Many of the other cases were probably due to importations that could not be documented.

Incidence rates by age show 'the impact of measles on junior and senior high school students (Figure 21). There was also a high incidence of measles among infants, probably

due to transmission from older siblings and other household contacts. Infants naturally remain at high risk due to current vaccination recommendations.

Figure 21

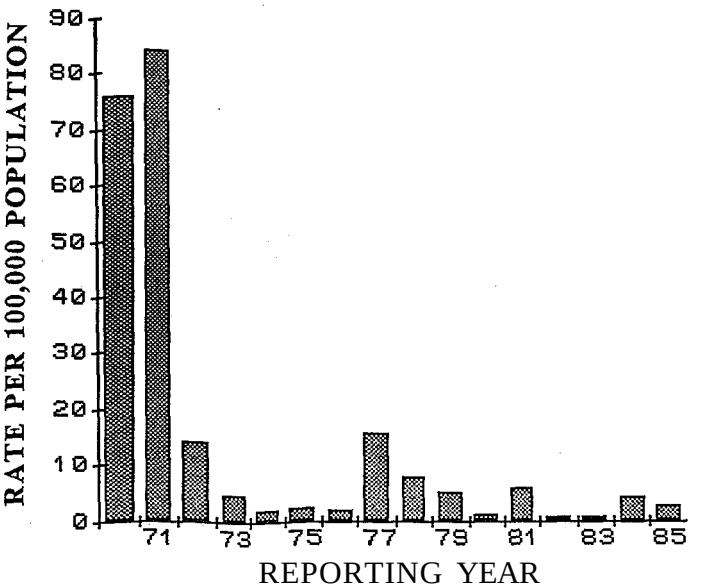
Reported Cases of Measles per 100,000 Population by Age Group, Texas - 1985



Rates of measles infection during 1984 and 1985 were very similar to those of a decade ago (Figure 22). An increasing number of cases have a history of previous measles vaccination. The question yet to be answered is whether these cases represent primary or secondary vaccine failures.

Figure 22

Reported Cases of Measles per 100,000 Population in Texas, 1970-1985



PERTUSSIS

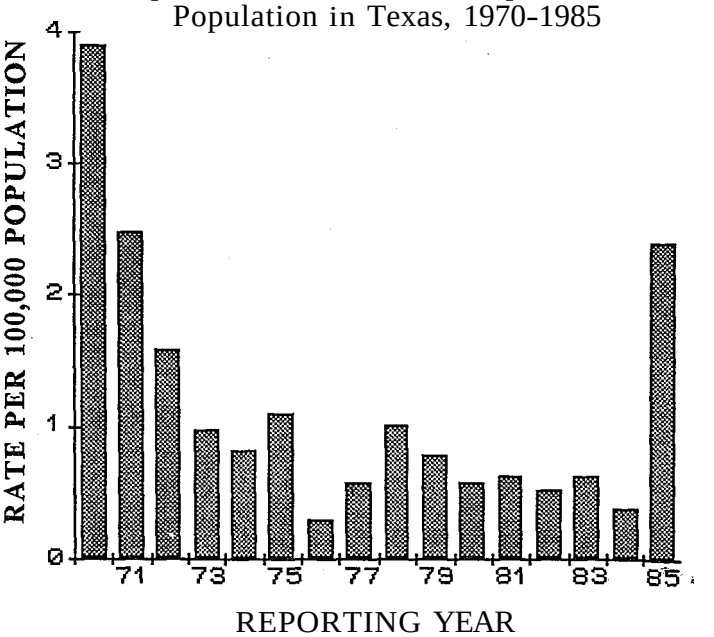
Pertussis is an acute respiratory illness caused by the bacterium *Bordetella* pertussis; the disease is most serious in infants and young children. Complications associated with pertussis include pneumonia, atelectasis, convulsions, encephalopathy, and death. Among older children, adolescents, and adults, the disease can be a mild to inapparent infection. This complicates investigation and control of the disease, and causes underreporting of the real incidence.

During 1985, Texas experienced a 532% increase in the number of pertussis cases from the 60 cases reported in 1984. Of the 379 cases, 69 were confirmed by isolation of B. pertussis by culture; 197 were confirmed by direct fluorescent smear; and 113 were confirmed by clinical diagnosis.

The incidence rate of 2.4 cases per 100,000 population reflects a level of pertussis which has not been seen in Texas since 1971 (Figure 23). Only one death was associated with pertussis in 1985, and several cases were complicated with severe sequelae.

Figure 23

Reported Cases of Pertussis per 100,000 Population in Texas, 1970-1985



Fifty-one cases of pertussis were reported in infants under two months of age, infants too young to have been vaccinated. Of the remaining 328 cases, 32% of the cases had a vaccine history appropriate for their age, and 29% had not been vaccinated against pertussis.

Concern for the high incidence of pertussis is compounded by the national attention being given to possible adverse effects of the pertussis vaccine. There are relative risks associated with the vaccine, but as with administration of any biological, there must be a balance between risk and benefit. In this case, the risk of illness and the resulting complications still far outweigh the risk of vaccination.

Public attention to the adverse effects of the diphtheria-tetanus-pertussis (DTP) vaccine has also caused an increase in lawsuits filed for alleged injury resulting from vaccination. As a result of these lawsuits, two major vaccine manufacturers have ceased production of the DTP vaccine. This has caused periodic shortages of the vaccine and greatly inflated vaccine prices.

It is unknown whether the increase in morbidity is directly related to vaccine shortages and adverse publicity, but the question has been foremost in numerous debates of the issue. There have been some decreases in doses administered; however, it is premature to speculate whether it is a,result of adverse publicity or merely an artifact in the data.

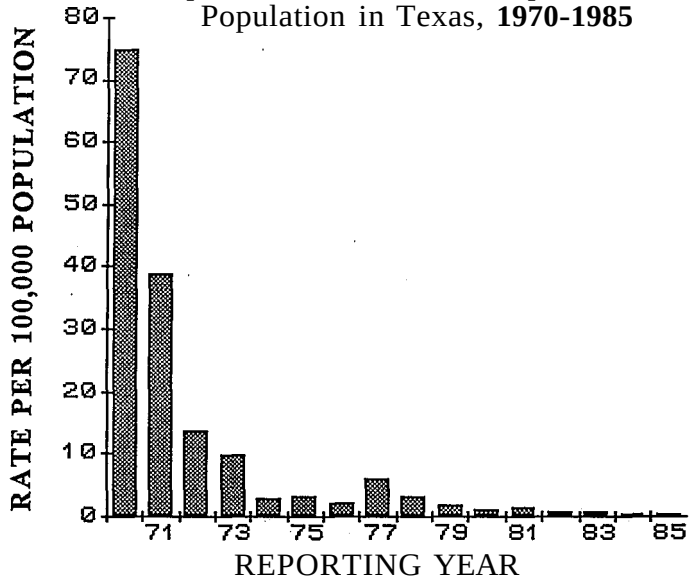
RUBELLA

Rubella is a relatively mild viral illness which may be inapparent in 30-50% of the cases. Generally the symptoms include a mild rash of approximately three days duration, a low grade fever, and lymphadenopathy. Arthritis and arthralgia are more commonly present among adults.

Fifty-two confirmed cases of rubella were reported in Texas in 1985. This is the lowest incidence of the disease ever reported in the state and represents a 31% reduction from the 75 cases reported in 1984. The continued reduction in rubella incidence since 1970 has largely been attributed to passage of immunization laws governing schools and child-care facilities (Figure 24).

Figure 24

Reported Cases of Rubella per **100,000** Population in Texas, **1970-1985**



The major concern associated with rubella infection is the effect of the virus on a developing fetus. Transplacental transmission of the virus is possible and can lead to fetal death, premature delivery, and numerous congenital defects. During **1985,** only four cases of rubella were reported in women of child-bearing age, none of whom was pregnant at the time, and no case of congenital rubella syndrome was reported.

Recommendations for vaccination against rubella have been liberalized in recent years, calling for vaccine to be administered to post-pubertal males and females who are susceptible. A program to identify and follow up susceptible females to ensure vaccination was implemented in Texas during 1985. This will further reduce the risk of infection among pregnant females.

TETANUS

Nine cases of tetanus were reported in Texas during 1985. Typically, tetanus occurs in infants under 28 days of age who are exposed at birth and in adults over 50 years of age who are not fully immunized. Ages of cases in 1985 ranged from 20-76 years; median age was 56. Three of the cases were under 50, and all were Hispanic males in their 20s. Two of these young men had never been vaccinated against tetanus, and the vaccination status of the third

was unknown. Similarly, one of the cases over 50 had never been vaccinated, three had not received the complete series of Td vaccine, and the vaccine status of two cases was unknown. The case-fatality ratio for 1985 was 56%; all of the patients who died from tetanus were over 50 years of age.

In contrast to 1984, 78% of the Texas cases in 1985 were male; all of the 1984 cases were female. Four (44%) of the 1985 cases were Hispanic, three (33%) were white, and two (22%) were black. Cases were predominately located in the north central, southeastern, and southern areas of the state.

Wounds or injuries related to tetanus included lacerations (4 cases), puncture wounds (2), abscesses/ulcers (2), and a third-degree burn (1). Injuries occurred secondary to: falls (2 cases), stepping on nails (2), inadequate healing in diabetic patients (2), an automobile accident (1), a burn (1), and running over a toe with a lawn mower (1). The median incubation period (between acute injury and onset) for the five patients on whom this information was provided was 11 days (range 4-12 days).

VIRAL HEPATITIS

Viral hepatitis is a collective term which refers to any one of three major diseases of the liver: hepatitis type A, hepatitis type B, and non-A, non-B hepatitis. These three infectious diseases differ markedly in their epidemiology with key differences noted in the length of incubation periods, modes of transmission, viral agents, population groups at risk, and potential for persistent infections as seen in chronic carriers.

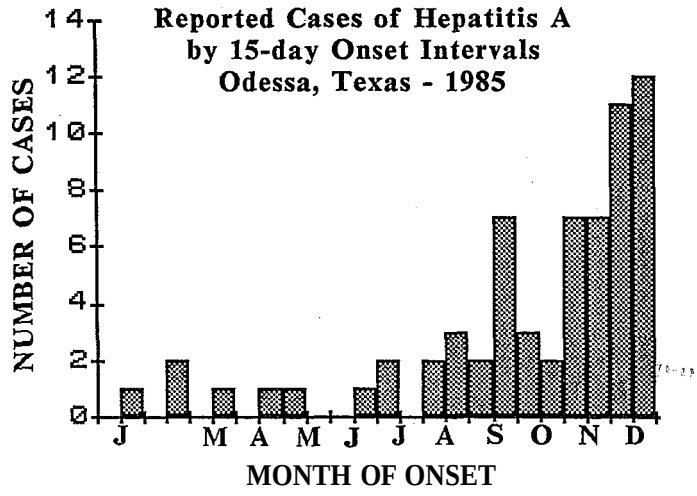
HEPATITIS TYPE A

Hepatitis A is an acute, self-limiting viral disease of the liver common among children and young adults. In 1985, there were 2565 cases reported from 145 counties in Texas. This represents only a slight decrease from the 2604 cases reported in 1984, and an incidence rate of 15.9 cases per 100,000 population. The sex ratio of cases in 1985 was 1.3:1 (male:female), and the case-fatality ratio was 0.5%, the result of 12 deaths due to hepatitis A. The patients who died ranged in age from 25-88 years; the mean age was 58 years. The diagnosis of hepatitis A was made by a positive IgM antibody test in 81% of the cases and clinical diagnosis in 15%; this information was not available for the remaining 4%.

Approximately 80% of hepatitis A cases in Texas occurred in persons under 30 years of age. Individuals between the ages of 5-29 years experienced hepatitis A at rates higher than the state as a whole. The incidence rates were highest in children 5-9 years of age and in adults 20-29; the rates for these two groups were 25.0 and 34.8 cases per 100,000, respectively. Overall, one out of every five cases occurred in children less than ten years of age. However, children under the age of five accounted for less than 5% of all cases and experienced a rate of only 9.2 cases per 100,000. (Underreporting is common in very young children because hepatitis A in this age group is often asymptomatic or so mild that it is not diagnosed.) Sixty-seven percent of the cases on whom race/ethnicity was reported in 1985 were white; 30% were Hispanic, and 3% were black. (Less than 1% belonged to other ethnic groups.) Information as to race/ethnicity was not provided for 8% of the hepatitis A cases in 1985.

Several outbreaks of hepatitis A were reported to the Bureau of Epidemiology or identified through the Reportable Disease Surveillance Program last year. The 1984 outbreak in Amarillo continued on into the first quarter of 1985 with hepatitis A activity predominating in the white, male population (64% of the cases). Of these, 89% were 15-30 years of age. Another outbreak occurred in Mineral Wells (Palo Pinto County) in the late spring and continued into the summer; 28 cases were identified among several households. All but three cases were young adults, 15 years of age or older, and the male:female ratio was 3:1. An outbreak of 52 cases was reported in Odessa (Ector County) late in 1985 (see Figure 25). These cases

Figure 25



occurred primarily in young adults 20-35 years of age (30 cases), and the male:female ratio of cases was 2.3:1.

HEPATITIS TYPE B

There were 1513 cases of acute hepatitis B reported from 115 counties in Texas in 1985 resulting in an incidence rate of 9.4 cases per 100,000 population. Ninety-five percent of cases were diagnosed by serologic testing; less than 3% were diagnosed clinically. Twenty deaths due to hepatitis B were reported to the Bureau of Epidemiology during 1985 resulting in a case-fatality ratio of 1.3% All but one were adults 21-82 years of age; the mean age of the patients who died was 56 years. A two-month-old, Asian child, born to a mother who presumably carried the hepatitis B virus also died from his illness.

Nationally, hepatitis B affects twice as many males as females, and surveillance data from Texas support that observation; the overall male:female ratio of cases in 1985 was 1.8:1. The incidence rates for the various population groups show a disproportionate distribution of cases by race/ethnicity and sex. Among males, these rates were 15.5 cases per 100,000 population for blacks, 14.1 for Hispanics, and 9.4 for whites. Among females, incidence rates were 9.8 for blacks, 5.6 for Hispanics, and 5.2 for whites.

Hepatitis B occurs most frequently among young adults, partly because two of the major modes of transmission are exposure to blood or body fluids through sexual contact and illicit, parenteral drug use. The two groups with the highest age-specific incidence rates in Texas last year were those 20-29 years of age and those 30-39; the rates were 24.5 and 13.2 cases per 100,000, respectively. Less than 2% of the hepatitis B cases were reported in children ten years of age or younger; this age group experienced a rate of only 0.8 cases per 100,000. Only 11% of the cases occurred in persons under the age of 20. In contrast, adults 20-29 years of age accounted for 46% of all cases, and adults 30-39 accounted for 22%. One out of six hepatitis B cases occurred in adults 40 years of age or older for an incidence rate of 4.7 cases per 100,000.

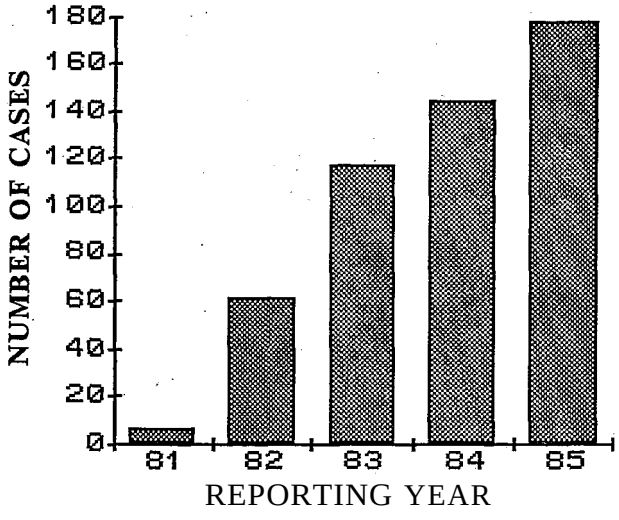
One outbreak of hepatitis B was reported in Fort Stockton (Pecos County) in 1985. The index case was diagnosed in May, but because of the long incubation period (2-6 months), the majority of cases did not become ill until late in 1985. The disease was believed to have been introduced into the community by a traveler from California and spread was facilitated by intravenous drug use among young adults. A total of 16 cases was identified.

NON-A, NON-B HEPATITIS

Although cases of non-A, non-B hepatitis have been recorded since 1984, the Bureau of Epidemiology has been receiving reports on cases since 1981. These reports continued to increase in 1985, as illustrated in Figure 26, and 178 cases were reported from 47 counties across the state. The sex ratio of cases was 1.3:1 (males:females), and the racial/ethnic distribution of cases included whites (63%), Hispanics (21%), and blacks (11%). Non-A, non-B hepatitis is reported primarily in persons 15 years of age and older (Figure 27); only 5% of the cases were under 15. There were five deaths attributed to non-A, non-B hepatitis resulting in a case-fatality ratio of 3%. The patients who died ranged in age from 23-80 years; the mean age was 46.

Figure 26

Reported Cases of Non-A, Non-B Hepatitis
Texas, 1981-1985

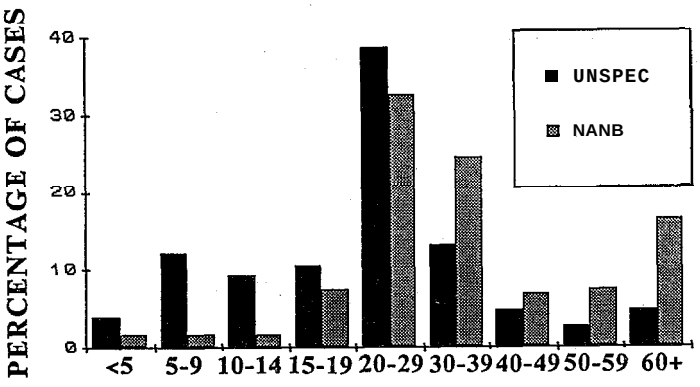


Although non-A, non-B hepatitis is generally associated with post-transfusion hepatitis (90% of all transfusion-acquired hepatitis is ncn-A, non-B), it is also responsible for at least 20% of sporadic hepatitis in any given community. There is evidence to support the existence of two or more viruses for non-A, non-B hepatitis in this country. The epidemiology of non-A, non-B hepatitis in the United States resembles that of hepatitis B: the agents are transmitted

from person to person by contact with blood or body fluids. Whereas young adults 15-40 years of age may acquire non-A, non-B hepatitis through sexual contact with a case or chronic carrier or via percutaneous contact from illicit, intravenous drug use, it is presumed that adults age 50 years and older primarily acquire non-A, non-B hepatitis from transfusion of blood or blood products during surgery.

Figure 27

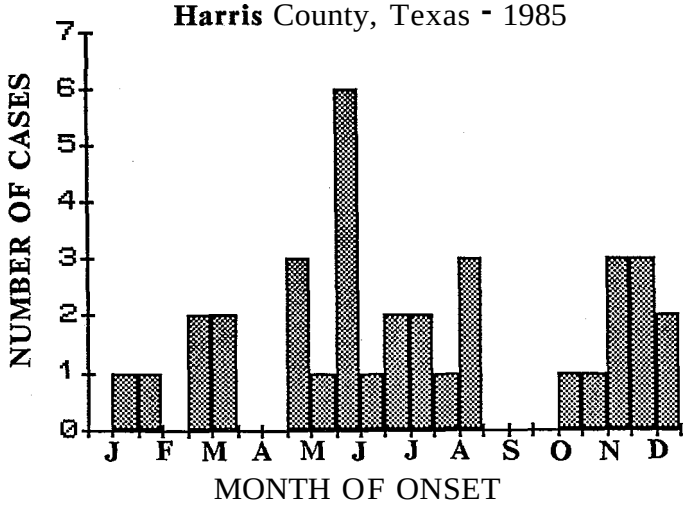
Distribution of Cases of Non-A, Non-B Hepatitis and Hepatitis Type Unspecified by Age Group Texas, 1985



Health officials in the Houston/Galveston area noted an unusual cluster of 22 cases of non-A, non-B hepatitis during the summer of 1985. Two, possibly three, cycles of infection can been seen on the epidemic curve illustrated in Figure 28. Sixteen (73%) of the cases lived within the Houston city limits. Cases ranged in age from 15-64 years; the mean age was 33 years. Thirteen (59%) were male, and 16 (73%) were white. Epidemiologic investigation of this cluster did not identify a common factor.

Figure 28

Reported Cases of Non-A, Non-B Hepatitis by 15-day Onset Intervals Harris County, Texas - 1985



HEPATITIS TYPE UNSPECIFIED

A total of 1290 cases of unspecified hepatitis was reported from 88 counties in Texas during 1985, representing a 24% decrease from the 1695 cases reported in 1984. The majority (51%) of the cases were white, 34% were Hispanic, and 11% were black. The male:female ratio was 1.2:1. Eight deaths due to unspecified viral hepatitis were reported to the Bureau of Epidemiology in 1985, resulting in a case-fatality ratio of 0.6%. The deaths ranged in age from 29-73 years; mean age was 47.

Hepatitis, type unspecified, is a general term applied to those viral hepatitis cases for which a specific diagnosis is not provided. Fifty-six percent were diagnosed clinically with no indication of serologic testing to establish a more specific diagnosis. It is assumed that many of these unspecified cases are hepatitis A, and the distribution of cases by age group supports this assumption. Like hepatitis A, 73% of the cases were less than 30 years of age. Hopefully, the decline in reported cases of hepatitis type unspecified will continue as more Texas physicians use the specific hepatitis serologic tests to make their diagnoses.

OTHER EPIDEMIOLOGIC ACTIVITIES

CUTANEOUS LEISHMANIASIS

Two cases of human cutaneous leishmaniasis were identified in February 1985, although both individuals had onset in 1984. A feline case was also identified in early 1985 but also had onset in 1984. The two human cases and one feline case occurred in the same area of South Texas as the previous cases reported in 1984.

The first case was a 13-year-old male from Uvalde who distinctly remembered an insect bite on the top of his right ear in October 1984. The other human case, a 28-year-old female, did not remember a bite but noticed a small, red papule overlying the left cheekbone in December 1984. Although this patient lived in Houston, she owned a house and 15 acres of undeveloped property near Seguin where she spent nearly every weekend doing repairs and yardwork. The cat was a one-year-old, long-haired, barn cat that lived with 20-30 other cats on a farm in Uvalde. Sometime late in 1984, a nodule appeared on the upper margin of the cat's right ear. The nodule grew and several other nodules appeared. In all cases, persistance of the lesions was the reason medical attention was sought.

These cases further support the theory of an endemic focus in that part of Texas which is south of 30°N latitude. Although leishmaniasis is not a reportable disease because the majority of diagnosed cases are imported, reporting of indigenous cases is encouraged. The diagnosis is confirmed by microscopic identification of the non-flagellated form (amastigotes) in stained smears of aspirates from the border of the lesion or by culture of the flagellates. Although culture methodology is not routinely available, it can be arranged through the Infectious Disease Division, Bureau of Epidemiology. Isolates are extremely important to allow comparisons with other species of Leishmania and to understand the epidemiology of the disease in Texas.

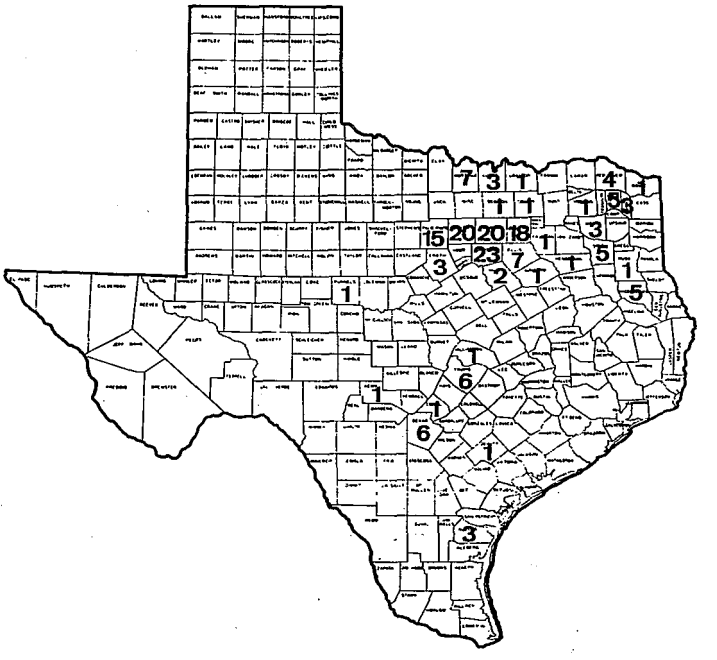
LYME DISEASE

Lyme disease is a bacterial illness characterized by a distinctive primary skin lesion, erythema chronicum migrans, with concurrent or subsequent development of cardiac, neurologic, or arthritic complications. Erythema chronicum migrans (ECM) begins as a red macule or papule and expands in a circular manner to form an annular lesion with partial central clearing. The etiologic agent of Lyme disease is a spirochete, Borrelia burgdorferi, which is transmitted to humans by the bite of an infected tick.

One hundred seventy-two confirmed cases of Lyme disease were reported from 33 counties in Texas in 1985. The majority (56%) of cases resided in Dallas, Johnson, Palo Pinto, Parker, and Tarrant counties, and 70% of the patients resided in Public Health Region 5. The distribution of cases throughout the state is presented in Figure 29. A patient was considered to be a confirmed case if ECM was present, or had cardiac, neurologic, or arthritic manifestations and an indirect fluorescent antibody (IFA) titer for B. burgdorferi ≥1:256, or isolation of the organism from a clinical specimen.

Figure 29

Reported Cases of Lyme Disease
by County of Residence, Texas - 1985



B. burgdorferi was cultured from the blood of two patients and from skin biopsies of four patients. One hundred eighteen (118) patients were confirmed by the presence of ECM, and 48 also experienced cardiac, neurologic, and/or arthritic manifestations with an IFA titer ≥1:256. Cases occurred in all months with 63% of the cases reporting onset in May, June, and July. Lyme disease was reported in all age groups as patients ranged in age from 1-94 years with a median age of 25 years.

Clinical symptoms were noted with the following frequencies: fever, 82%; fatigue, 73%; headache, 73%; ECM, 69%; myalgia, 57%; and arthralgia, 55%. One hundred eight (10.8) cases reported arthritis in at least one joint; the knee was affected in 54% of the cases. The neurologic manifestations experienced by 71 patients included peripheral neuropathy, 38%; mental confusion, 32%; dysesthesia, 22%; meningitis, 21%; and insomnia, 21%. Ninety-five percent of the 40 patients who experienced cardiac manifestations reported palpitations; 8% experienced tachycardia.

Thirty-eight (38) cases with ECM recalled an insect bite at the site of their initial lesion. These included tick bites (29), flea bites (8), and a deer fly bite (1).

VIRUS SURVEILLANCE

The Bureau of Epidemiology manages a virus surveillance system which incorporates viral isolate information from the 19 hospital, university, and military laboratories throughout the state which culture for viruses. These laboratories are located in Austin, Dallas, Galveston, Houston, Lubbock, San Antonio, and Temple.

Table 7 provides the number of viruses isolated by month of specimen collection. The temporal distribution of enteroviruses, influenza viruses, parainfluenza viruses, rotaviruses, and respiratory syncytial virus (RSV) is graphically represented in Figures 30-37. The increased numbers of *Chlamydia trachomatis* reported September through December reflect the addition of a new laboratory to the system.

Ninety-eight percent of *C. trachomatis* isolates on whom ages were reported were from patients 10-39 years of age, and 88% of these were female. Sixty-nine percent of echoviruses were isolated from children under five years of age. The majority of parainfluenza type 3 viruses, rotaviruses, and RSV were in infants under one year of age. Eighteen percent of the cytomegalovirus (CMV) isolates were also in infants under one reflecting possible congenital infections. AIDS patients represented the majority of CMV infections in the 20-39 Year age group. Table 8 presents the number of viruses by age of the patient.

Table 7

Number of Viral Isolates by Month of Specimen Collection
Texas, 1985

Virus	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Adenovirus	12	5	21	24	15	15	11	15	8	12	17	11	166
Chlamydia trachomatis	22	24	23	30	13	24	13	22	81	90	92	59	493
Cytomegalovirus	36	35	43	50	52	25	37	43	50	58	53	43	525
Coxsackievirus (Group A)*	1	0	0	0	3	2	2	4	1	1	0	0	14
Coxsackievirus (Group B)*	0	0	0	6	4	5	9	8	4	3	0	1	40
Echoviruses*	6	4	5	21	45	56	58	30	30	14	14	11	294
Influenza A(H1N1)	0	1	3	0	0	0	0	0	0	0	0	0	4
Influenza A(H3N2)	246	349	22	0	1	0	0	0	0	1	0	3	622
Influenza B	1	0	2	2	0	0	0	0	0	0	2	8	15
Parainfluenza (1)	0	0	0	0	0	0	0	3	1	6	4	2	16
Parainfluenza (2)	0	0	0	0	0	0	0	1	2	1	5	1	10
Parainfluenza (3)	2	1	12	18	8	1	2	1	0	0	1	0	46
Polioviruses*	5	3	3	8	3	10	0	6	4	6	2	9	59
Rotaviruses	52	34	8	7	4	3	3	3	1	2	7	21	145
Respiratory Syncytial Virus	26	12	2	2	0	0	0	0	0	14	32	66	154
Varicella/Zoster	6	4	5	7	4	3	4	4	6	4	1	0	48

* Enteroviruses

Enteroviruses were isolated from 184 of 185 patients identified as having meningitis. Seventy-five percent of the patients with meningitis caused by an enterovirus had onset of symptoms May through August, and echovirus type 4 was the most commonly reported virus causing meningitis. Influenza A(H3N2) virus was responsible for the overwhelming majority (90%) of respiratory tract infections reported in January and February 1985. Thirty-seven percent of the patients with a respiratory tract infection reported in March and April had. a parainfluenza type 3 virus infection. In November and December, 70% of the reported respiratory tract infections resulted from RSV infections.

In 1985, 206 viral isolates were reported from 133 patients identified as having acquired immune deficiency syndrome. Ninety-one percent of the isolates were CMV. Urine (52%). was the most frequently reported source of CMV, followed by bronchial lavage (21%), lung biopsy (13%), and blood (4%).

Figure 30

Parainfluenza (3) Virus Isolates
by Month of Specimen Collection, Texas - 1985

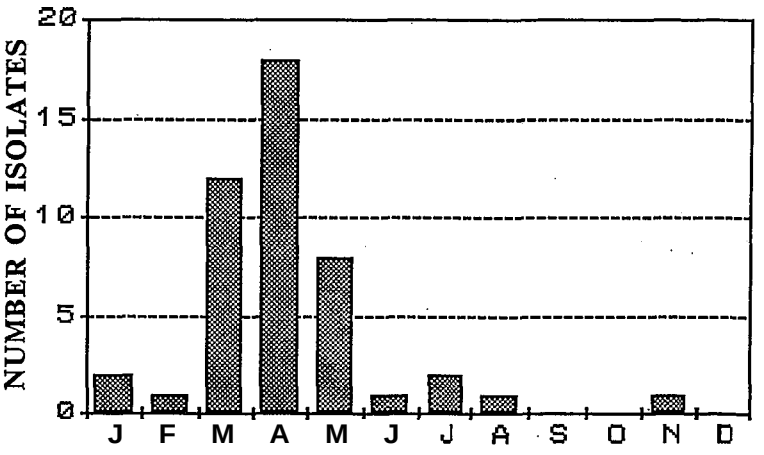


Table 8

Number of Viral Isolates by Age of Patient
Texas, 1985

Virus	<1	1-4	5-9	10-19	20-39	40-59	60+	Unk	Total
Adenovirus	32	45	10	9	20	3	1	46	166
Chlamydia trachomatis	6	0	1	173	180	0	0	133	493
Cytomegalovirus	64	27	4	19	156	77	13	165	525
Coxsackievirus (Group A)*	3	4	2	2	0	0	0	3	14
Coxsackievirus (Group B)*	11	8	3	3	2	0	0	13	40
Echoviruses*	96	52	20	14	30	1	0	81	294
Influenza A(H3N2)	41	122	161	93	120	65	16	4	622
Parainfluenza (1)	6	5	1	0	1	0	0	3	16
Parainfluenza (2)	2	5	2	0	0	0	1	0	10
Parainfluenza (3)	28	9	0	2	2	2	1	2	46
Polioviruses*	31	10	1	0	0	0	1	16	59
Rotaviruses	71	27	0	2	0	0	0	45	145
Respiratory Syncytial Virus	60	18	1	2	0	0	0	73	154
Varicella/Zoster	0	1	1	2	15	8	7	14	48

* Enteroviruses

Figure 31

Parainfluenza (1) and (2) Virus Isolates by Month of Specimen Collection, Texas - 1985

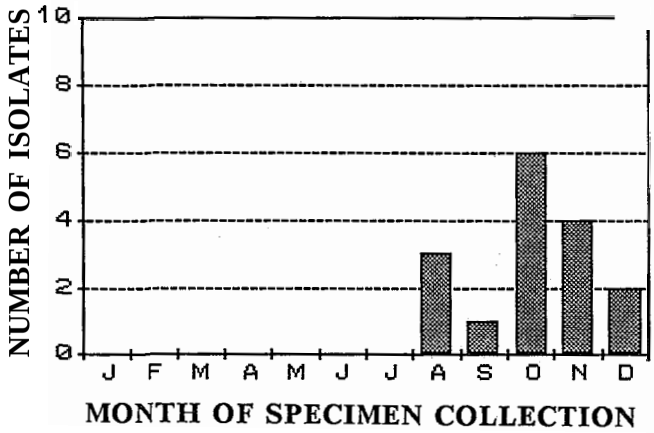


Figure 32

Rotavirus Isolates by Month of Specimen Collection, Texas - 1985

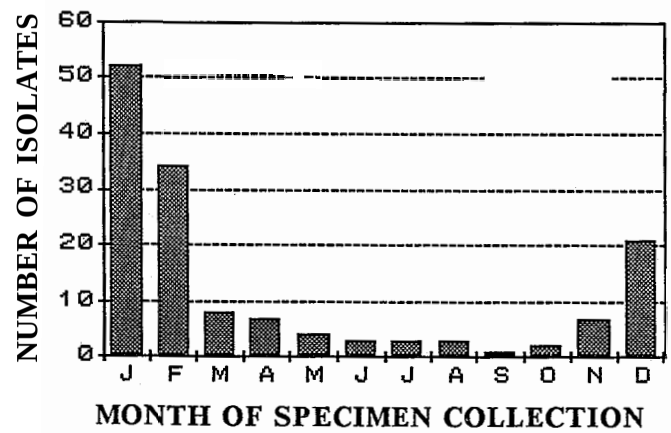


Figure 33

Respiratory Syncytial Virus Isolates by Month of Specimen Collection, Texas - 1985

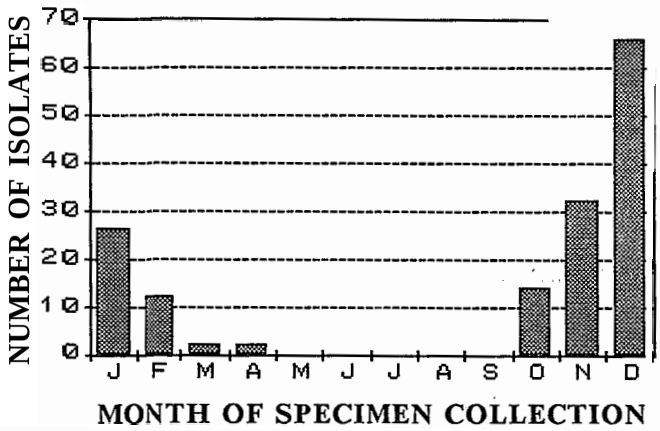


Figure 34

Non-Polio Enterovirus Isolates by Month of Specimen Collection, Texas - 1985

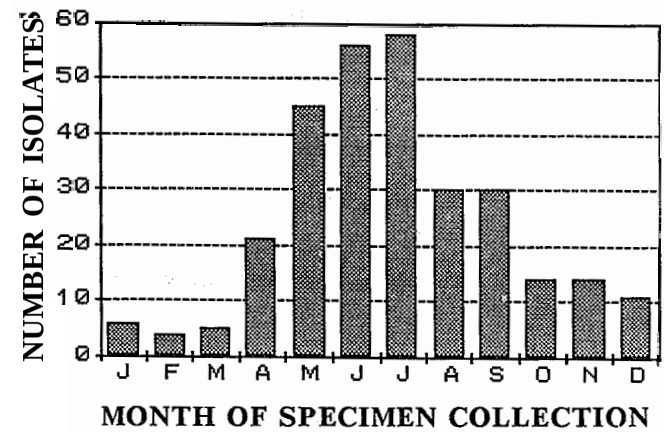


Figure 35

Coxsackievirus (A) Isolates by Month of Specimen Collection, Texas - 1985

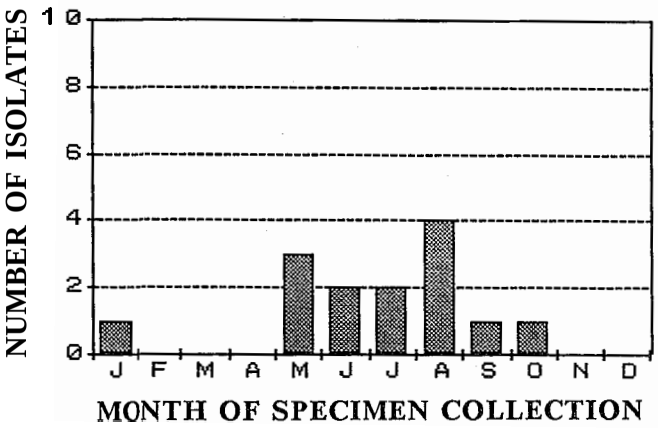


Figure 36

Coxsackievirus (B) Isolates by Month of Specimen Collection, Texas - 1985

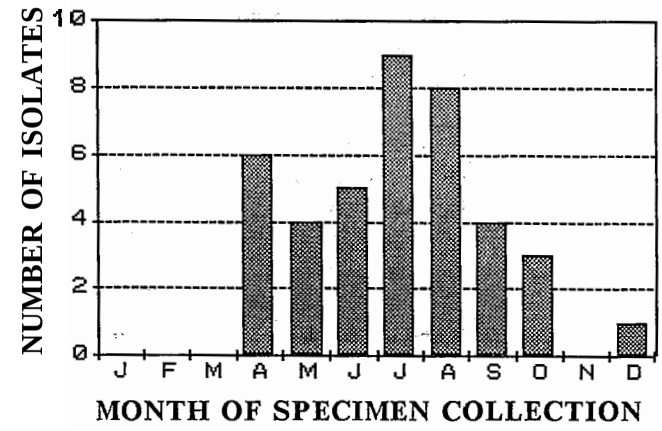
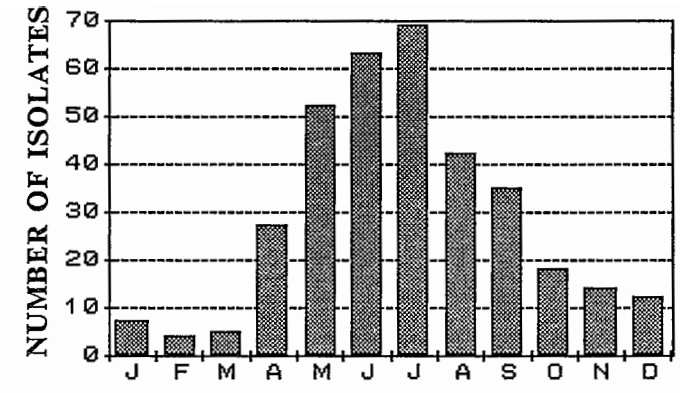


Figure 37

Echovirus Isolates
by Month of Specimen Collection, Texas - 1985



APPENDIX

REPORTED CASES OF SELECTED DISEASES IN TEXAS
1976 - 1985

DISEASE	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976
RIDS	483	236	97	0	0	0	0	0	0	0
AMEBIASIS	279	356	412	493	604	355	301	210	216	146
ASEPTIC MENINGITIS	989	645	1175	785	622	432	753	405	315	312
BOTULISM	4	9	3	1	4	0	3	4	1	0
BRUCELLOSIS	47	26	84	27	45	28	28	23	33	77
CRMPVLOBRCTERIOSIS	666	198	0	0	0	0	0	0	0	0
CHICKENPOX	20758	16124	15031	11050	10824	9478	7009	6163	8222	8280
CHOLERA	0	0	0	0	3	0	0	0	0	0
COCCIDIOIDOMYCOSIS	21	4	0	0	0	0	0	0	0	0
CONGENITAL RUBELLR SYNDROME	0	0	0	0	1	1	4	2	2	3
DENQUE	1	0	0	2	1	61	0	3	0	0
DIPHTHERIR	0	0	0	1	0	1	0	0	4	1
ENCEPHALITS	142	113	159	157	91	63	59	47	55	35
ENCEPHALITIS, ST. LOUIS	1	1	3	18	4	68	5	0	9	77
ENCEPHALITIS, WESTERN EQUINE	1	0	1	4	4	0	0	0	7	0
BONORRHER *	66728	65802	76903	81580	81822	80297	81828	88943	84789	82304
HANSEN'S DISEASE	28	31	35	29	33	32	31	28	26	16
HEPRTITIS, A	2565	2605	3030	3226	2721	2978	3289	2696	2086	1762
HEPATITIS, B	1513	1544	1234	1043	823	819	685	586	650	497
HEPRTITIB, NON-A, NON-B	178	144	0	0	0	0	0	0	0	0
HEPRTITIS, UNSPECIFIED	1290	1695	2387	2071	1608	2194	1840	1198	1064	836
HISTOPLASMOSIS	44	10	0	0	0	0	0	0	0	0
INFLUENZR & FLU-LIKE ILLNESS	96164	176900	92160	93736	143955	99292	86689	99394	67094	132749
LEGIONELLOSIS	29	24	0	0	0	0	0	0	0	0
LEPTOSPIROSIS	6	4	4	18	9	3	8	14	6	6
MRLRRIR	93	77	54	55	87	115	45	33	27	16
MEASLES	450	642	37	129	851	181	670	1033	2032	265
MENINGITIS, H. INFLUENZRE	554	524	394	0	0	0	0	0	0	0
MENINBITIS, OTHER BACTERIAL	423	301	0	0	0	0	0	0	0	0
MENINGOCOCCAL INFECTIONS	132	180	188	238	327	145	166	144	147	140
MUMPS	321	219	225	255	227	212	908	1527	995	1755
PERTUBBIB	379	60	95	79	91	82	104	132	75	36
PLAGUE	0	1	0	1	0	0	0	0	0	0
POLIOMYELITIS, PRRRLYTIC	0	0	0	0	0	0	0	0	3	0
PSITTACOSIS	1	9	7	8	9	8	5	5	6	2
Q FEVER	0	0	1	1	0	2	2	0	1	2
RRBIES IN MAN	1	1	0	0	0	0	1	0	0	1
RELAPSING FEVER	0	3	1	4	1	1	8	0	1	1
REYE SYNDROME	13	17	25	0	0	0	0	0	0	0
ROCKY HOUNTRIN SPOTTED FEVER	33	53	108	64	45	31	22	28	30	29
RUBELLR	52	75	117	120	176	131	212	407	776	267
SALMONELLOSIS	2442	2339	2838	2506	2612	2456	2198	1199	1045	917
SCARLET FEVER	1080	739	0	0	0	0	0	0	0	0
SHIGELLOSIS	1718	1659	2206	2173	2299	2162	2299	1865	1565	1304
STREPTOCOCCAL SORE THROAT	34999	36540	38982	47473	46072	32113	37526	29433	31595	36385
SYPHILIS, PRIMRRY & SECONDARY *	4610	5136	6254	6338	5329	3828	3154	2637	2123	2041
TETANUS	9	10	8	8	8	13	17	11	16	12
TOXIC SHOCK SYNDROME	27	22	29	31	0	0	0	0	0	0
TRICHINOSIS	3	13	4	2	2	6	4	2	11	2
TUBERCULOSIS	1891	1762	1965	2045	2015	2075	2090	2160	2326	2454
TULRREMIR	8	9	13	16	23	12	11			10
TYPHOID FEVER	32	30	72	42	127	67	67			18
TYPHUS FEVER, ENDEMIC	25	37	46	41	49	61	59			58

* CIVILIAN CASES ONLY

Table II

REPORTED CASES OF SELECTED DISEASES IN TEXAS PER 100,000 POPULATION, 1976 - 1985

DISEASE	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976
AMEBIASIS	1.73	2.27	2.68	3.30	4.11	2.49	2.25	1.61	1.68	1.16
ASEPTIC MENINGITIS	6.13	4.11	7.66	5.25	4.24	3.04	5.63	3.10	2.45	2.48
BOTULISM	0.02	0.06	0.02	0.01	0.03	0.00	0.02	0.03	0.01	0.00
BRUCELLOSIS	0.29	0.17	0.55	0.18	0.31	0.20	0.21	0.18	0.26	0.61
CAMPYLOBACTERIOSIS	4.13	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CHICKENPOX	128.70	102.70	97.95	73.94	73.73	66.61	52.36	47.23	63.93	65.72
CHOLERR	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00
COCCIDIOIDOMYCOSIS	0.13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DENGUE	0.00	0.00	0.00	0.01	0.01	0.43	0.00	0.02	0.00	0.00
DIPHTHERIR	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.03	0.01
ENCEPHRLITIS	0.88	0.72	1.04	1.05	0.62	0.44	0.44	0.36	0.43	0.28
ENCEPHRLITIS, ST. LOUIS	0.00	0.01	0.02	0.12	0.03	0.48	0.04	0.00	0.07	0.61
ENCEPHRLITIS, WESTERN EQUINE	0.00	0.00	0.01	0.03	0.03	0.00	0.00	0.00	0.05	0.00
GONORRHER *	413.73	419.11	501.13	545.90	557.37	564.32	611.34	681.56	659.32	653.26
HANSEN'S DISEASE	0.17	0.20	0.23	0.19	0.22	0.22	0.23	0.22	0.20	0.13
HEPRTITIS, A	15.90	16.59	19.74	21.59	18.54	20.93	24.57	20.66	16.22	13.99
HEWTITIS, B	9.38	9.83	8.04	6.98	5.61	5.76	5.12	4.50	5.05	3.94
HEPRTITIS, NON-A, NON-B	1.10	0.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HEWTITIS, UNSPECIFIED	8.00	10.80	15.55	13.86	10.95	15.42	13.75	9.18	8.27	6.64
HISTOPLRSMOSIS	0.27	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INFLUENZR & FLU-LIKE ILLNESS	596.24	1126.71	600.55	627.25	980.62	697.81	647.66	761.64	521.73	1053.65
LEGIONELLOSIS	0.18	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
LEPTOSPIROSIS	0.04	0.03	0.03	0.12	0.06	0.02	0.06	0.11	0.05	0.05
MERSLES	2.79	4.09	0.24	0.86	5.80	1.27	5.01	7.94	15.80	2.10
MENINGITIS, H INFLUENZAE	3.43	3.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MENINGITIS, OTHER BACTERIAL	2.62	1.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MENINGOCOCCAL INFECTIONS	0.82	1.15	1.23	1.59	2.23	1.02	1.24	1.11	1.14	1.11
MUMPS	1.99	1.39	1.47	1.71	1.55	1.49	6.78	11.70	7.74	13.93
PERTUSSIS	2.35	0.38	0.62	0.53	0.62	0.58	0.78	1.01	0.58	0.29
PLRGUE	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
POLIOMYELITIS, PARALYTIC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.00
PSITTRCOSIS	0.00	0.06	0.05	0.05	0.06	0.06	0.04	0.04	0.05	0.02
Q FEVER	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.00	0.01	0.02
RRBIES IN MRN	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01
RELAPSING FEVER	0.00	0.02	0.01	0.03	0.01	0.01	0.06	0.00	0.01	0.01
REYE SYNDROME	0.08	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ROCKY MOUNTAIN SPOTTED FEVER	0.20	0.11	0.70	0.43	0.31	0.22	0.16	0.22	0.23	0.23
RUBELLA	0.32	0.48	0.76	0.80	1.20	0.92	1.58	3.13	6.03	2.12
SFILMONELLOSIS	15.14	14.90	18.49	16.77	17.79	17.26	16.42	9.19	8.13	7.28
SCRRLET FEVER	6.70	4.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHIGELLOSIS	10.65	10.57	14.38	14.54	15.66	15.19	17.18	14.29	12.17	10.35
STREPTOCOCCRL SORE THRORT	217.00	232.73	254.02	317.67	313.84	225.69	280.36	225.54	245.68	288.79
SYPHILIS, PRIMRRY & SECONDRRY *	28.58	32.71	40.75	42.41	36.30	26.90	24.30	20.20	16.51	16.20
TETRNUS	0.06	0.06	0.05	0.05	0.05	0.09	0.13	0.08	0.12	0.10
TOXIC SHOCK SYNDROME	0.17	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRICHINOSIS	0.02	0.08	0.03	0.01	0.01	0.04	0.03	0.02	0.09	0.02
TUBERCULOSIS	11.72	11.22	12.80	13.68	13.73	14.58	15.61	16.55	18.08	19.48
TULRREMIA	0.05	0.06	0.08	0.11	0.16	0.08	0.08	0.05	0.09	0.08
TYPHOID FEVER	0.20	0.19	0.47	0.28	0.87	0.47	0.50	0.31	0.22	0.14
TYPHUS FEVER, ENDEMIC	0.16	0.24	0.30	0.27	0.33	0.43	0.44	0.25	0.43	0.46

* CIVILIAN CASES ONLY

Table III

DEATHS FROM SELECTED DISEASES AND CONDITIONS IN TEXAS
1976 - 1985

DISEASE/CONDITION	ICD CODE	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976
RCQUIRED IMMUNE DEFICIENCY SYNDROME	279.1	154	75	24	0	0	0	0	0	0	0
RMEBIFISIS	006	2	2	4	1	2	6	5	2	4	5
ASEPTIC MENINGITIS	047	1	3	1	1	2	2	2	0	0	5
BOTULISM	005.1	0	1	0	0	0	0	0	1	0	0
BRUCELLOSIS	023	0	0	0	0	0	0	0	0	0	1
CHICKENPOX	052	0	6	6	4	5	7	5	7	8	10
CHILD BRTTERINB & OTHER MFILTREFITMENT	E 967	12	0	40	25	22	15	13	26	41	28
COCCIDIOIDOMYCOCIS	114	3	3	4	5	7	2	4	4	5	2
CONOENITFIL RUBELLA SYNDROME	771.0	0	1	0	1	0	0	0	0	1	0
DIPHTHERIFI	032	0	0	0	0	0	1	0	0	1	1
ENCEPHFILITIS	049	10	5	8	12	11	16	9	12	16	12
GONORRHEFI	098	1	0	0	0	0	1	1	2	1	0
GUILLAIN-BARRE SYNDROME	357.0	13	15	14	14	8	8	13	18	14	6
HANSEN'S DISEFISE	030	0	0	0	1	0	0	0	2	1	1
HEPATITIS, A	070.0-070.1	12	8	8	10	2	8	8	33	34	42
HEPRTITIS, B	070.2-070.3	33	36	39	23	19	23	14	11	6	5
HEPFITITIS, UNSPECIFIED	070.4-070.9	22	21	27	25	28	30	19	49	63	63
HISTOPLFISMOSIS	115	3	6	4	8	6	7	4	7	2	5
INFLUENZFI	487	76	125	67	29	133	70	30	190	64	567
LEPTOSPIROSIS	100	0	0	0	0	1	0	3	0	1	2
MQLQRIA	084	0	0	0	0	0	0	0	0	0	0
MEASLES	055	0	1	0	0	0	0	1	1	3	0
MENINGOCOCCAL INFECTIONS	036	13	18	12	26	34	24	27	37	25	20
MUMPS	072	0	0	0	0	0	0	0	1	0	2
MYCOBACTERIA INFECTIONS	031	18	14	15	8	9	8	8	6	4	2
PERTUSSIS	033	0	4	1	0	0	0	0	0	1	0
POLIOMYELITIS, RCUTE	045	0	1	0	0	1	0	0	0	0	0
REYE SYNDROME	331.8	13	8	15	7	24	17	19	0	0	0
ROCKY MOUNTAIN SPOTTED FEVER	082.0	0	4	4	0	1	0	1	0	1	0
RUBELLA	056	0	0	0	0	0	0	0	0	2	1
SFILMONELLOSIS	003	4	5	4	3	8	5	2	3	3	1
SHIGELLOSIS	004	4	1	2	0	0	0	1	6	7	3
STREP THROQT, SCARLET FEVER	034	1	1	0	0	0	1	2	0	4	1
SUDDEN INFANT DERTH SYNDROME (SIDS)	798.0	317	351	334	324	332	323	340	298	293	217
SYPHILIS, TOTAL	090-097	4	7	8	5	13	12	12	15	13	18
TETRNUS, EXCLUDINO NEONATAL	037	4	0	1	2	4	5	5	4	9	4
TETANUS, NEONRTFIL	771.3	0	0	0	0	0	0	1	0	0	0
TRICHINOSIS	124	0	0	0	0	0	0	0	0	0	0
TUBERCULOSIS	010-018	107	120	136	119	134	111	112	163	176	211
TULRREMIFI	021	0	0	0	0	0	0	1	0	0	1
TYPHOID FEVER	002.0	0	0	0	0	0	1	1	0	0	0
TYPHUS FEVER, ENDEMIC	081.0	2	0	0	0	0	0	0	0	0	0

* CIVILIAN CASES ONLY

Table IV

REPORTED CASES OF SELECTED DISEASES BY MONTH OF ONSET
TEXAS, 1985

DISEASE	TOTAL	JRN	FEB	MAR	FIPR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
AMEBIASIS	279	13	12	12	36	19	37	35	27	34	23	19	12
FISEPTIC MENINGITIS	989	34	23	28	72	137	198	155	120	134	59	38	41
BOTULISM	4	1	0	1	1	0	1	0	0	0	0	0	0
BRUCELLOSIS	47	1	2	11	5	4	5	6	4	2	4	1	2
CAMPYLOBFICTERIOSIS	666	35	36	28	43	83	86	79	58	55	59	66	38
CHICKENPOX	20758	1357	1908	5028	3867	3158	2204	234	181	98	222	711	1790
COCCIDIOIDOMYCDSIS	21	2	1	3	3	3	1	0	2	2	3	1	0
ENCEPHALITIS, INFECTIOUS	140	9	6	13	9	16	16	19	13	14	8	6	11
ENCEPHALITIS, ST. LOUIS	1	0	0	0	8	0	0	8	0	1	0	0	0
GONORRHEFI *	66728	5889	4642	5176	5739	5166	4608	6593	5146	6010	7323	5527	4989
HANSEN'S DISEASE	28	3	7	3	1	3	1	8	2	3	1	4	0
HEPRTITIS, R	2565	265	187	177	217	229	204	228	211	243	231	197	176
HEPATITIS, B	1513	122	111	109	129	105	122	126	123	146	160	143	117
HEPRTITIS, NON-A, NON-B	178	12	9	20	14	15	21	21	15	7	16	12	16
HEPQTITIS, UNSPECIFIED	1290	136	99	106	113	121	123	109	95	128	92	108	60
HISTOPLFISMOSIS	44	4	4	7	4	5	3	2	3	4	1	6	1
INFLUENZFI & FLU-LIKE ILLNESS	96164	7857	21989	26975	7617	4789	2924	1444	1645	1584	3937	4951	10452
LEGIONELLOSIS	29	1	3	0	4	1	4	5	3	1	3	3	1
LEPTDSPIROSIS	6	0	0	0	1	0	0	1	0	0	3	1	0
MALARIA	91	5	2	8	6	11	15	16	8	7	8	4	1
MEQSLES	450	2	2	56	81	146	121	23	4	3	6	4	2
MENINGOCOCCRL INFECTIONS	132	20	14	9	16	5	7	5	4	6	10	15	21
MUMPS	321	28	60	39	42	23	10	15	6	31	32	25	10
PERTUSSIS	379	4	7	12	14	28	51	97	70	35	30	21	10
PSITTRCOSIS	1	0	0	0	8	0	0	1	0	0	0	0	0
RABIES IN MAN	1	0	0	0	0	1	0	0	0	0	0	0	0
ROCKY MOUNTRIN SPOTTED FEVER	33	1	0	3	5	2	4	4	4	8	0	0	2
RUBELLFI	52	8	5	2	7	6	3	3	2	3	6	5	2
SFILMONELLOSIS	2442	90	84	129	150	178	207	289	338	359	294	176	148
SHIGELLOSIS	1718	91	66	74	84	110	192	212	251	210	192	139	97
STREP SORE THRORT	34999	2786	3715	4477	2798	3051	3067	1566	1613	1675	1878	3605	4768
SYPHILIS, PRIMFIRY & SECONDFIRY *	4610	260	394	390	501	364	319	411	332	339	498	371	431
TETANUS	9	1	0	0	2	1	1	1	2	0	1	0	0
TOXIC SHOCK SYNDROME	27	2	2	0	5	0	3	1	4	1	4	1	4
TRICHINOSIS	3	0	0	1	1	0	0	0	0	1	0	0	0
TUBERCULOSIS	1891	173	159	150	169	164	165	174	135	177	146	143	136
TULFIREMIFI	8	0	0	1	2	2	0	0	1	1	0	1	0
TYPHOID FEVER	32	4	1	3	1	4	3	3	6	2	3	1	1
TYPHUS FEVER, ENDEMIC	25	1	1	2	1	7	7	2	0	0	1	1	2

* CIVILIAN **CASES** ONLY

Table V

REPORTED CASES OF SELECTED DISEASES BY AGE GROUP
TEXAS, 1985

DISEASE	TOTAL	>1	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60+	UNK
ACQUIRED IMMUNE DEFICIENCY SYNDRDME	483	0	2	0	0	3	125	236	75	31	11	0
CIMEBIASIS	279	12	30	20	17	8	60	49	22	8	13	40
ASEPTIC MENINGITIS	989	225	98	92	64	86	197	116	23	11	14	63
BOTULISM	4	4	0	0	0	0	0	0	0	0	0	0
BRUCELLOSIS	47	0	0	0	2	5	11	10	8	5	6	0
CRPIPYLOBRCTERIOSIS	666	52	101	36	29	33	158	97	36	33	63	28
CHICKENPOX	20758	239	2415	7562	1145	595	0	0	0	0	0	8802
COCCIDIOIDOMYCOSIS	21	0	0	0	1	1	1	7	5	1	4	1
ENCEPHCILITIS	142	6	12	10	6	14	22	24	14	8	24	2
GONORRHER *	66728	0	90	61	627	15912	39668	8533	1420	301	116	0
HANSEN'S DISEASE	28	0	0	0	0	5	3	2	3	6	9	0
HEPRTITIS, A	2565	5	120	339	220	290	994	329	80	51	63	74
HEPRTITIS, B	1513	3	11	8	12	129	698	337	96	63	92	64
HEPRTITIS, NON-A,. NON-B	178	2	1	3	3	13	57	43	12	13	29	2
HEPRTITIS, UNSPECIFIED	1290	1	50	154	116	133	485	167	60	34	61	29
HISTOPLASMOSIS	44	0	0	0	0	1	3	13	6	8	10	3
LEGIONELLOSIS	29	2	0	0	0	0	3	5	3	5	11	0
LEPTOSPIROSIS	6	0	0	0	1	3	0	1	0	0	1	0
MALARIA	93	3	6	9	7	9	30	16	8	2	3	0
MEASLES	450	47	90	50	104	130	19	9	0	0	0	1
MENINGITIS, H. INFLUENZCIE	554	281	245	10	3	2	2	1	0	0	4	6
MENINBOCOCCRL INFECTIONS	132	46	24	10	5	3	13	7	7	4	11	2
MUMPS	321	3	45	112	57	45	22	14	7	2	3	11
PERTUSSIS	379	181	98	28	12	3	33	17	3	2	0	2
PSITTACOSIS	1	0	1	0	0	0	0	0	0	0	0	0
RELRPSING FEVER	0	0	0	0	0	0	0	0	0	0	0	0
REYE SYNDROME	13	4	2	4	2	0	1	0	0	0	0	0
ROCKY MOUNTRIN SPOTTED FEVER	33	0	4	3	0	0	3	6	6	4	7	0
RUBELLA	52	16	14	10	6	1	2	0	3	0	0	0
SRLMONELLOSIS	2442	561	461	152	61	71	218	175	116	88	258	281
SHIGELLOSIS	1718	65	630	273	80	47	230	152	64	30	53	94
SYPHILIS, PRIMRRY & SECONDRRY *	4610	0	4	2	29	511	2471	1091	312	142	48	0
TETANUS	9	0	0	0	0	0	3	0	0	2	4	0
TOXIC SHOCK SYNDROME	27	0	1	2	2	6	10	5	0	1	0	0
TUBERCULOSIS	1891	0	85	34	24	43	285	342	274	275	529	0
TULRREMIR	8	0	0	0	1	0	3	0	1	1	2	0
TYPHOID FEVER	32	0	2	6	5	3	9	6	0	0	1	0
TYPHUS FEVER, ENDEMIC	25	0	0	2	3	0	3	3	2	2	10	0

* CIVILIAN CASES ONLY

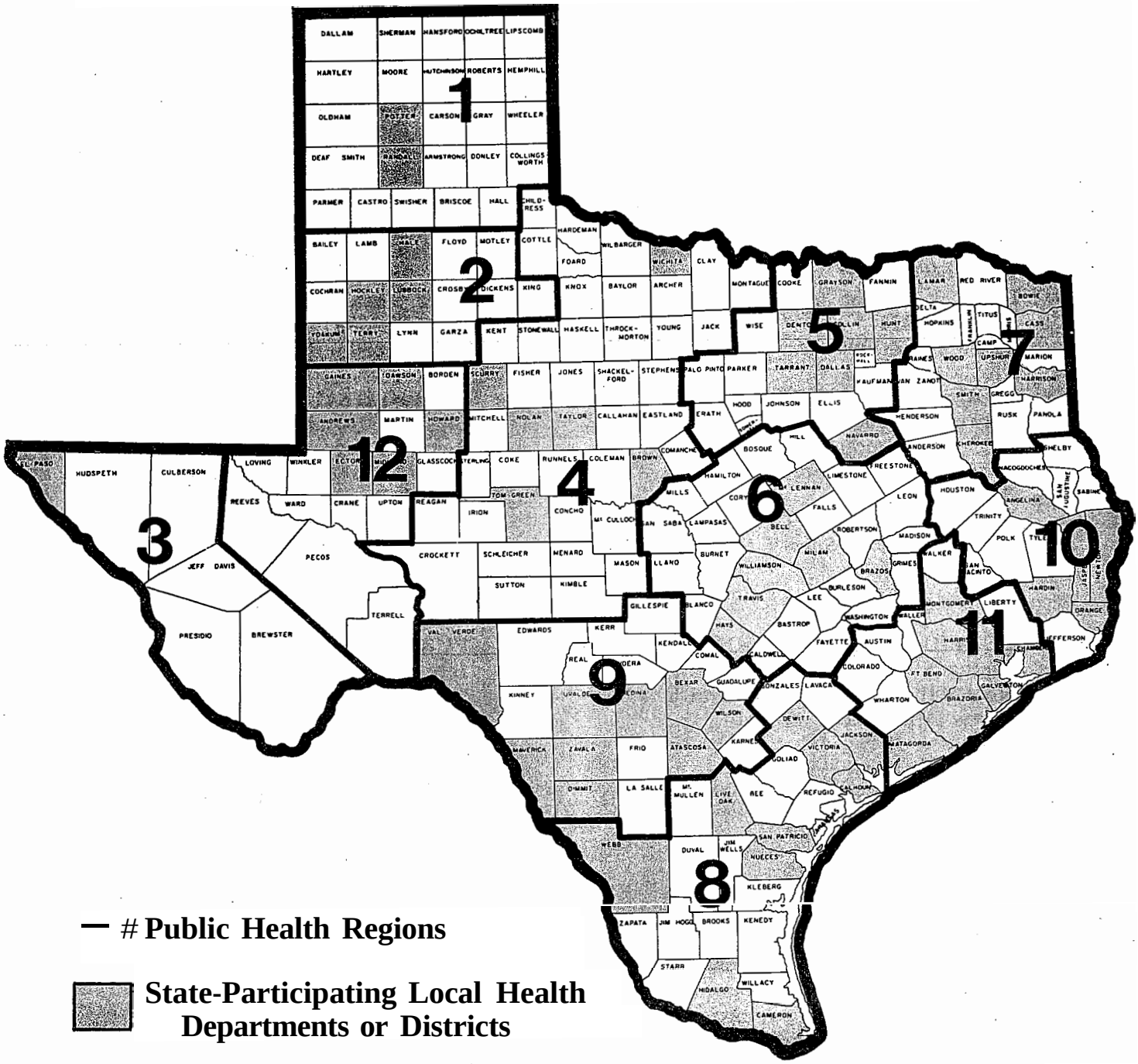
Table VI

REPORTED CASES OF SELECTED DISEASES BY PUBLIC HEALTH REGION
TEXAS, 1985

DISEASE	TOTRL	PHR 1	PHR 2/12	PHR 3	PHR 4	PHR 5	PHR 6	PHR 7/10	PHR 8	PHR 9	PHR 11
RIDS	403	1	5	0	6	156	41	14	5	24	231
AMEBIASIS	279	1	6	6	15	38	96	2	65	21	29
ASEPTIC MENINGITIS	969	14	24	43	31	264	206	24	38	93	252
BOTULISM	4	0	0	3	0	1	0	0	0	0	0
BRUCELLOSIS	47	1	1	3	0	5	4	4	15	8	6
CAMPYLOBACTERIOSIS	666	43	21	79	12	103	101	41	41	41	164
CHICKENPOX	20756	392	1591	780	432	6474	1864	1572	2644	877	4132
COCCIDIOIDOMYCOSIS	21	0	3	1	1	4	0	0	3	3	6
ENCEPHRLITIS	142	3	6	5	3	42	6	14	4	16	41
GONORRHEA *	66726	1174	2098	2646	1542	22409	6171	6075	1941	3690	18782
HRNSEN*S DISERSE	26	0	0	0	1	5	0	3	15	2	2
HEPATITIS, A	2565	226	143	146	117	810	412	53	197	275	186
HEPRTITIS, B	1513	36	85	99	70	474	176	47	160	92	274
HEPRTITIS, NON-A, NON-B	176	8	1	9	11	61	16	4	5	18	43
HEPRTITIS, UNSPECIFIED	1290	24	57	88	32	508	100	46	233	29	171
HISTOPLASMOSIS	44	0	0	0	0	13	4	3	3	1	20
INFLUENZR & FLU-LIKE ILLNESS	96164	3532	17404	126	6901	15978	6114	3224	15976	13893	9016
LEGIONELLOSIS	29	0	0	2	1	4	2	1	1	1	17
LEPTOSPIROSIS	6	0	0	0	0	0	0	4	0	1	1
MALARIA	93	0	0	0	3	20	12	0	5	10	43
MEASLES	450	0	4	20	2	30	4	66	277	7	20
MENINGITIS, H. INFLUENZCK	554	30	23	14	17	188	61	26	21	45	129
MENINGITIS, OTHER BACTERIAL	423	8	26	7	11	166	29	26	25	22	103
MÉNINGOCOCCAL INFECTIONS	132	3	6	1	6	41	17	18	7	4	29
MUMPS	321	14	13	19	4	113	22	12	34	46	44
PERTUSSIS	379	2	18	9	4	75	7	27	7	193	37
PSITTRCOSIS	1	0	0	0	1	0	0	0	0	0	0
RABIES	1	0	0	0	1	0	0	0	0	0	0
REYE SYNDROME	13	0	2	1	0	2	0	1	4	1	2
ROCKY MOUNTAIN SPOTTED FEVER	33	0	0	0	0	19	3	10	0	1	0
RUBELLR	52	1	5	6	2	0	6	7	15	5	3
SRLMONELLOSIS	2442	50	95	135	58	543	257	241	256	202	605
SCARLET FEVER	1060	31	74	75	34	137	74	142	263	62	188
SHIGELLOSIS	1718	23	64	112	44	316	165	146	209	171	448
STREPTOCOCCRL INFECTIONS	34999	739	4122	281	4118	8656	3176	2999	4223	2181	4562
SYPHILIS, PRIMRRY & SECONDARY *	4610	37	47	149	46	1740	302	383	196	417	1291
TETRNUS	9	0	0	0	2	1	0	1	2	0	3
TOXIC SHOCK SYNDROME	27	0	2	0	1	10	4	2	1	4	3
TRICHINOSIS	3	0	0	0	0	0	0	0	0	1	2
TUBERCULOSIS	1891	15	18	106	30	422	100	129	245	167	659
TULAREMIA	8	1	1	0	0	1	0	3	1	1	0
TYPHOID FEVER	32	1	0	1	0	6	0	3	10	2	9
TYPHUS FEVER, ENDEMIC	25	0	0	0	2	1	1	2	18	0	1

* CIVILIAN CASES ONLY

Texas Department of Health
Public Health Regions
and
State-Participating Local Health Departments



Public Health Regions

PUBLIC HEALTH REGION 1
Henry C. Moritz, M.D., M.P.H.
Regional Director Public Health
Texas Department of Health
P. O. Box 968, WTSU Station
Canyon, Texas 79016
[Location: Old Health Center Bldg.
300 Victory Drive]
806/655-7151
Tex-An 844-2801

PUBLIC HEALTH REGION 2
E. Arnold Isaacson, M.D., M.P.H., F.A.C.P.
Regional Director Public Health
Texas Department of Health
4709 66th Street
Lubbock, Texas 79414
806/797-4331
Tex-An 842-5280

PUBLIC HEALTH REGION 3/12
Albert G. Randall, M.D.
Regional Director Public Health
Texas Department of Health
P. O. Box 10736
El Paso, Texas 79997
[Location: 6090 Surety, Suite 115, 799051
915/533-4972
Tex-An 846-8127

PUBLIC HEALTH REGION 4
Myron J. Woltjen, M.D., M.P.H.
Regional Director Public Health
Texas Department of Health
P. O. Box 2648
Abilene, Texas 79602
[Location: 1290 S. Willis, #100, 796051
915/695-7170
Tex-An 847-7011

PUBLIC HEALTH REGION 5
C. R. Allen, Jr., M.D., M.P.H.
Regional Director Public Health
Texas Department of Health
P. O. Box 6229
Arlington, Texas 76011
[Location: 2561 Matlock Rd., 760151
817/460-3032
Tex-An 833-9011

PUBLIC HEALTH REGION 6
Chas R. Webb, Jr., M.D.
Regional Director Public Health
Texas Department of Health
P. O. Box 190
Temple, Texas 76503
[Location: 2408 S. 37th Street]
817/778-6744
Tex-An 820-2201

PUBLIC HEALTH REGION 7/10
Marietta Crowder, M.D.
Regional Director Public Health
Texas Department of Health
P. O. Box 2501
Tyler, Texas 75710
214/595-3585
Tex-An 830-6011

PUBLIC HEALTH REGION 8
Charles B. Marshall, Jr., M.D., M.P.H.
Regional Director Public Health
Texas Department of Health
1401 S. Rangerville Road
Harlingen, Texas 78550
512/423-0130
Tex-An 820-4501

PUBLIC HEALTH REGION 9
Jorge Flores, M.D., M.P.H.
Regional Director Public Health
Texas Department of Health
P. O. Drawer 630
Uvalde, Texas 78801
[Location: Old Memorial Hospital,
Garner Field Road]
512/278-7173
Tex-An 820-1532

PUBLIC HEALTH REGION 11
Nina M. Sisley, M.D., M.P.H.
Regional Director Public Health
Texas Department of Health
1110 Avenue G
Rosenberg, Texas 77471
713/342-8685
Tex-An 851-3000

NOTIFIABLE DISEASE REPORT

Disease	Date of Onset	Patient Information (Last name, first)	Age	Sex	Race	Type of Diagnosis
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				

REPORT BY NUMBER OF CASES PER AGE GROUP

	<1 Yr.	1-4	5-9	10-14	15+	Unk.	TOTAL
CHICKENPOX							

REPORT BY NUMBER OF CASES

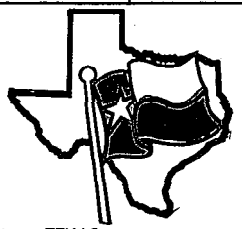
INFLUENZA & FLU-LIKE ILLNESS _____

STREPTOCOCCAL SORE THROAT _____

SCARLET FEVER _____

OCCUPATIONAL DISEASES

Disease	Date of Diagnosis	Patient Information (Last name, first)	Age	Sex	Race	Agency Use
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				



USE THE FOLLOWING CODES

RACE/ETHNICITY		TYPE OF DIAGNOSIS	
White	1	Clinical	1
Hispanic	2	Serology	2
Black	3	Culture	3
American Indian	4	Biopsy/Smear	4
Asian/Pacific Islander	5	Other	5

CHECK FOR MORE FORMS_____

ENVELOPES_____

Mail to: TEXAS DEPARTMENT OF HEALTH
BUREAU OF EPIDEMIOLOGY
1100 WEST 49TH STREET
AUSTIN, TX 78756-3180
Or Call: 1—800-252-6239

REPORT SUBMITTED BY: _____

ADDRESS: _____ **CITY:** _____

FORM EPI1 (12/85)

NOTIFIABLE DISEASE REPORT (CONTINUED)

Disease	Date of Onset	Patient Information (Last name, first)	Age	Sex	Race	Type of Diagnosis
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				

OCCUPATIONAL DISEASES

Disease	Dote of Diagnosis	Potient Information (last name first)	Age	Sex	Race	Agency Use
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				
		NAME CITY PHYSICIAN				

REPORTABLE DISEASES OF TEXAS

The Communicable Disease Prevention and control Act (Texas Civil Statutes, Article 4419b-1) authorizes measures for the control of communicable diseases and for the establishment of proceduresfor reporting them. The Texas Board of Health, under authority of that Act, has issued rules (25 Texas Administrative Code, $97.1 through $97.11) implementing the act, including the designation of certain communicable diseases as reportable.

Diseases to be Reported Immediately by Telephone to the Texas Department of Health in Austin

(CALL TOLL-FREE 1-800-252-8239)

Botulism
Cholera
Diphtheria
Measles
Plague
Poliomyelitis, Paralytic
Yellow Fever

Diseases Reportable by Name

Acquired Immune Deficiency Syndrome
Amebiasis
Anthrax
Botulism
Brucellosis
Campylobacteriosis
Cholera
Coccidioidomycosis
Congenital Rubella Syndrome
Dengue
Diphtheria
Encephalitis (specify etiology)
Gonorrhea
Haemophilus influenzae Infections (systemic)
Hansen's Disease
Hepatitis, Viral
- Type A
- Type B
- Type D
- Non-A, Non-B
- Unspecified

Histoplasmosis
Legionellosis
Leptospirosis
Listeria Infections
Lyme Disease
Malaria
Measles
Meningitis
- Aseptic/Viral
- Bacterial (specify etiology)
- Fungal
- Other

Meningococcal Infections
Mumps
Pertussis
Plague
Poliomyelitis, Paralytic
Psittacosis
Q Fever
Rabies in Man
Relapsing Fever
Reye Syndrome
Rocky Mountain Spotted Fever

Rubella
Salmonellosis
Shigellosis
Syphilis
Tetanus
Toxic Shock Syndrome
Trichinosis
Tuberculosis
Tularemia
Typhoid Fever
Typhus Fever
- Endemic (murine)
- Epidemic

Vibrio Infections (specify species)
Viral Hemorrhagic Fever
Yellow Fever

Diseases Reportable by Numerical Totals

Chickenpox
Influenza & Flu-like Illness

Occupational Diseases Reportable by Name

Acute Occupational Pesticide Poisoning
Asbestosis
Elevated Blood Lead in Adults (blood lead ≥ 40 µg/dl in persons ≥ 15 years of age)
Silicosis

By rule 25 TAC, $99.1, the Texas Board of Health has designated the above occupational diseases as reportable under authority of the Occupational Disease Reporting Act (TCS Art. 5182c).

In addition to the requirements of individual case reports, any unusual or group expression of illness — whether related to communicable disease, occupationally caused sickness, or due to an unknown cause — which may be of public health concern should be reported to the Texas Department of Health in Austin, through the local health authorities, or to the State Epidemiologist directly by the most expeditious means.

The Venereal Disease Act (Art. 4445d, TCS, amended) and the Tuberculosis Code (Art. 4477-11, TCS, amended) require the reporting of cases of syphilis and gonorrhea and tuberculosis, respectively. Form J-27, "Confidential Report of Venereal Disease," is used to report syphilis and gonorrhea, and Form TB-400, "Report of Case and Patient Services," is used to report tuberculosis.

Your cooperation in promptly securing these reports helps all Texans and is greatly appreciated.

Reports of these diseases may be made in writing to the Texas Department of Health in Austin or directly by calling the toll-free number:

1-800-252-8239

6-101a 10/86