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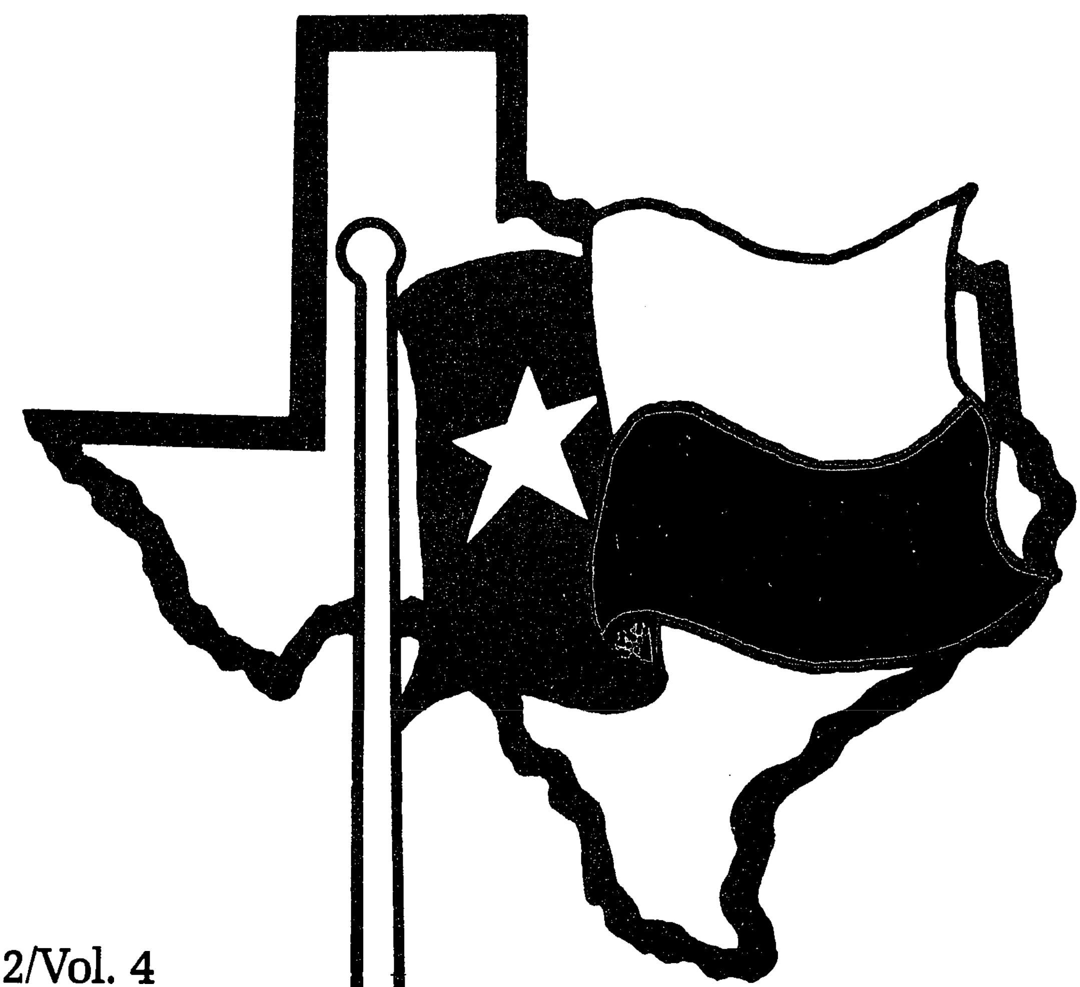
REPORTED MORBIDITY AND MORTALITY IN TEXAS

1981 ANNUAL SUMMARY

TEXAS DEPARTMENT OF HEALTH



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REPORTED MORBIDITY AND MORTALITY IN TEXAS 1981 ANNUAL SUMMARY

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FOREWORD

The prevention and the control of infectious disease have resulted in the conservation of millions of lives **during** this century. Infectious diseases such as typhoid, diphtheria, malaria, cholera, yellow fever, **and** tuberculosis killed hundreds of thousands of people in the United States every year in the past, and in 1900, infectious disease accounted for eight of the twelve **leading** causes of death. Today, only two of the twelve leading causes, influenza and pneumonia and diseases of early infancy, are so related.

The prevention and control of infectious disease require that a current knowledge of the incidence of these conditions be maintained and that then, by epidemiologic methods, it be determined where, when, and in whom the disease is occurring. Only with this knowledge can the proper planning and execution of preventive and control measures be accomplished.

The collection and the analysis of disease statistics are public health functions. However, the origin of most of the data must, of course, be with the practicing physicians and health facilities. The completeness and accuracy of the data depend upon the conscientiousness with which reporting is carried out. Therefore, in presenting this ***Reported Morbidity and Mortality in Texas — 1981 Annual Summary,*** we wish to thank **all** those physicians, other health professionals, and facilities which made the report possible, and we wish to urge all others to help us to make the next report even more accurate and useful by reporting all cases of infectious disease or disease outbreaks.

Robert Bernstein

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

William J. Foran

William J. Foran, Chairman
State Board of Health

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INTRODUCTION

HISTORICAL BACKGROUND

The first State Health Officer was appointed by the Governor of Texas in 1879 at a time when public health work was limited principally to quarantine; this action led to the creation of the Texas Quarantine Department in 1891. The department was reorganized in 1903 and became 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, public health laws which required the reporting of certain communicable diseases were passed by the Texas State Legislature. In May 1920, the procedures for the reporting and management of communicable diseases in Texas finally became operative. Since that time, a surveillance system based on the communicable disease reports originating with practicing physicians and forwarded each week from designated reporting agents has served as the primary mechanism for the collection of morbidity data for the Texas Department of Health.

THE REPORTING SYSTEM

Specific rules and regulations for the control of communicable diseases have been approved by the State Board of Health under the legal authority vested in them by Articles 4418a, 4419, and 4477 of the Texas Revised Civil Statutes. These include the designation of certain diseases as "reportable" as well as the establishment of the mechanics for reporting communicable diseases, control measures, and the use of quarantine procedures.

The reporting system, coordinated by the Bureau of Epidemiology, Texas Department of Health, is made up of approximately five-hundred designated reporting agents within the state of Texas; the actual number of reporting agents varies slightly from year to year. Texas law requires that physicians report cases of communicable disease to these designated reporting agents which include appointed city and county Health Officers, local city and county health departments, health districts, state schools, state hospitals, veterans' hospitals, and military installations. Notifiable Case Report Cards, Form C-15 (Appendix), are mailed to reporting agents each week, the cards are then completed and returned to the Bureau of Epidemiology. Information regarding reportable diseases is also received by the Bureau of Epidemiology through other means including telephone calls, laboratory reports, completed case investigation forms, and death certificates which have been filed with the Bureau of Vital Statistics, Texas Department of Health.

Morbidity data are organized, recorded, and examined on a weekly basis for evidence suggestive of disease trends, including fluctuations in morbidity, seasonal variation, changes in disease distribution, and characteristics of the natural history of endemic, epidemic, or sporadic diseases. Each week morbidity data are published in ***Preventable Disease News,*** a report which is distributed to local health authorities, city and county Health Officers, and **all** other reporting agents and upon request to health care facilities, health professionals, and other interested parties. This publication also features informational material pertinent to preventable disease control activities on local, state, and national levels.

The communicable disease reporting system in Texas is essential to 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 reportable 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, Atlanta, Georgia. These efforts contribute to an effective overall communicable disease prevention and control program for the nation.

SOURCES OF DATA

This report contains final figures on the reported incidence of the notifiable (reportable) diseases in Texas for 1981. Data are submitted to the Bureau of Epidemiology through the statewide morbidity reporting system and are supplemented by other data collection procedures and surveillance activities within the Bureau, the Tuberculosis Services Division, the Infectious Disease Control Division, the Bureau of Veterinary Public Health, the Immunization Division, the Bureau of Vital Statistics, and the Bureau of Laboratories.

The population figures for 1973-1980 used in computing incidence rates for the state are from the Current Population Report, Series P-25, published by the Federal Bureau of the Census. The population figures for 1981 were provided by the State Health Planning and Resource Development Division, Texas Department of Health, through the Population Data System. Please note that the 1981 provisional Texas population figure (14,680,000) reflects a 3.2% increase over the 1980 state population (14,229,000).

The mortality data which appear in Table **III,** Appendix, are computer 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 degree of completeness of disease reporting by physicians and of the morbidity data published in this report is influenced by the interests and priorities of the various reporting agents in disease control and surveillance; however, the degree of underreporting is thought to remain relatively consistent with a slow but steady trend toward completeness. This allows data comparison over the years.

SELECTED DISEASE SUMMARIES

AMEBIASIS

Entamoeba histolytica is the most medically important intestinal protozoan parasite of man. Infection occurs primarily through the ingestion of ***E. histolytica*** cysts present in food or water contaminated by feces from infected, and usually asymptomatic, indiviuals. Man is the principal host and reservoir for infection. Symptoms, when present, are variable and may range from mild abdominal discomfort to acute dysentery. Severe extra- intestinal infections (**i.e.** hepatic or brain abcess) occur infrequently, but can lead to death of the infected person. One Texas resident, a 69-year-old, white male died in May 1981, with the cause of death reported as "**Amebiasis -** Hepatic Abcess and Colonitis." Underlying conditions included: chronic lymphocytic leukemia, autoimmune hemolytic anemia, pure red cell aplasia, organic heart disease, and diabetes **mellitus.**

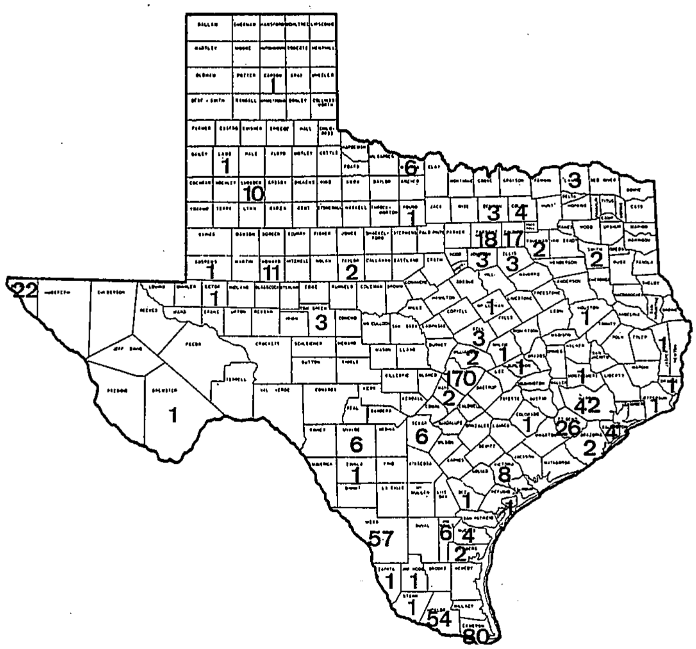
During 1981, the Texas Department of Health received reports of 604 amebiasis infections, a 70% increase over the 355 infections reported in 1980, and the largest number of reports received during any year since 1964, when 662 infections were reported. Figure 1 shows the geographic distribution of reported cases.

A number of counties reported substantial increases over past years' reports; Cameron County up **220%,** Harris County up **133%,** and Travis County up 115% over 1980 totals, and Webb County up from zero **(0)** cases reported in 1980 to 57 cases reported in 1981. Though no common source outbreaks were reported, follow-up in Cameron County identified a large portion of the cases as occurring in residents of lower socioeconomic areas. The increased numbers of cases in Webb County can in part be attributed to improved reporting, but may also have been associated with heavy rains and flooding during the late spring. The eleven (11) cases reported by Howard County (as opposed to zero **(0)** cases in 1980) were in Haitian refugees, and may have been imported **or** spread person-to-person during internment.

Eighty-six of the Travis County **cases** were related to serologic screening of an institutionalized population and were not necessarily indicative of symptomatic **ill**ness. Two-thirds (113 cases) of the 170 infections reported in Travis County were in residents of state institutions. Statewide, 156 (25.8% of the total) infections were reported among residents of institutions for the mentally **and/or** developmentally retarded. In these groups, poor personal hygiene and **person-to-person** contact influence infection to a far greater extent than does exposure to contaminated food or water.

Of the 604 reports, 397 were male and 203 were female; sex was not reported in four cases. One hundred seventy-seven (177) individuals were reported as white, 312 as Hispanic, 33 as black, and 18 as **Asian/Pacific** Islander; ethnicity was not reported for 64 individuals. As in previous years, **all** age groups were included among reports, with the **20-29** year-old group accounting for the largest portion (123 reports for 20.4% of the total) of reported infections.

FIGURE 1
Reported Cases of Amebiasis in Texas
By County of Residence, 1981



ARBOVIRAL INFECTIONS:

Nine arboviral infections were reported in Texas residents in 1981; four **were due** to St. Louis encephalitis (SLE) virus, four were due to western equine encephalomyelitis (WEE) virus, and one was due to dengue virus. All had onset in the late summer months, and all of the cases recovered.

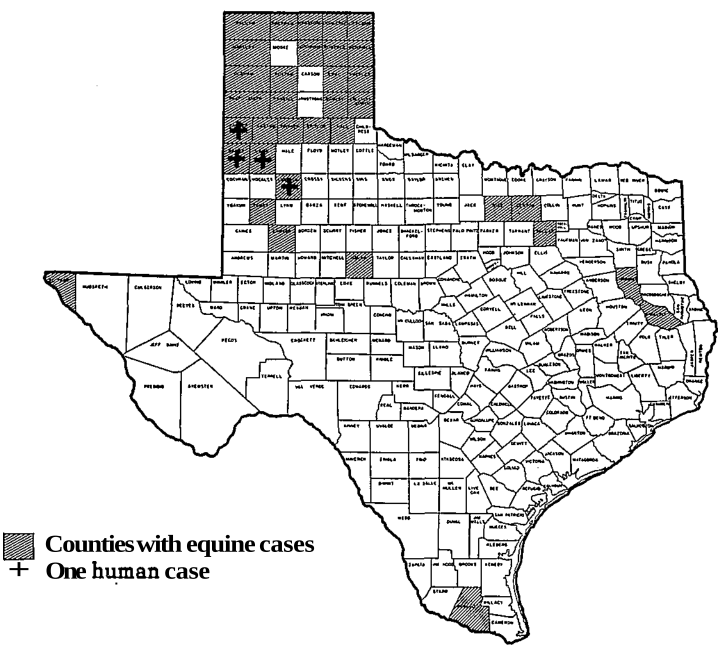
St. **Louis** Encephalitis: The four cases of SLE infection were scattered across the state in El **Paso,** Hidalgo, Harris, and Taylor Counties. The case from Harris County had visited Hidalgo County two weeks prior to the onset of his illness. The two adult cases, a 17-year-old male and a 60-year-old female, experienced acute illness that quickly resolved. The two children, a **five-year-old** female and an eight-year-old female, had more severe **ill**ness and neurologic sequelae.

SLE was isolated from only one pool of mosquitoes collected in 1981. These mosquitoes were collected in June in northwest Harris County, several miles from the area in central Houston that had been the focus of the SLE outbreak in 1980.

Western Equine Encephalitis: There were four human cases of WEE infection in 1981. All were children: an eleven-year-old female, a six-month-old male, and two 6-week-old males. They were residents of Lamb, Lubbock, Bailey, and Parmer Counties, respectively. The two infants had illness described as meningitis, whereas the six-month-old had meningoencephalitis, and the eleven-year-old had encephalitis. All four children were discharged from the hospital with no apparent sequelae. It remains to be seen whether there will be any long term neurologic defects; 50% of infants less than one month of age who recover from WEE infection have recurring convulsions, marked motor and behavioral changes, or other disability. In response to these 1981 infections, the Director of Public Health Region 2 instituted in 1982 an intensified encephalitis surveillance project in the Lubbock County area.

The extent of equine illness due to WEE was much greater than the observed human illness. There were 119 equine cases reported from a total of 35 counties (see Figure 2). (Equine cases are commonly diagnosed on the basis of clinical symptoms, whereas human cases must be confirmed by virus isolation or a significant change in antibody titer.) WEE virus was isolated from mosquito pools in Crosby, Dallas, and El Paso Counties, as part of the surveillance system. Sentinal flocks of chickens in Hidalgo and Lubbock Counties also developed antibodies over the course of the surveillance period. Increased levels of WEE in the environment, as demonstrated by human and equine cases and surveillance data, were observed in most of the Midwest, extending from Texas into Canada.

FIGURE 2
Reported Cases of Western Equine Encephalitis In Texas Human and Equine Cases By County of Residence, 1981



Dengue: In contrast to the 61 cases reported in 1980, only one case of dengue was reported to the Texas Department of Health in 1981. This was a 37-year-old male physician who had traveled to Dominica, a Caribbean Island, as part of a WHO dengue investigative team. This imported case had an infection with dengue virus type 4. The outbreak of dengue in South Texas in 1980 was due to type 1 virus.

ASEPTIC MENINGITIS

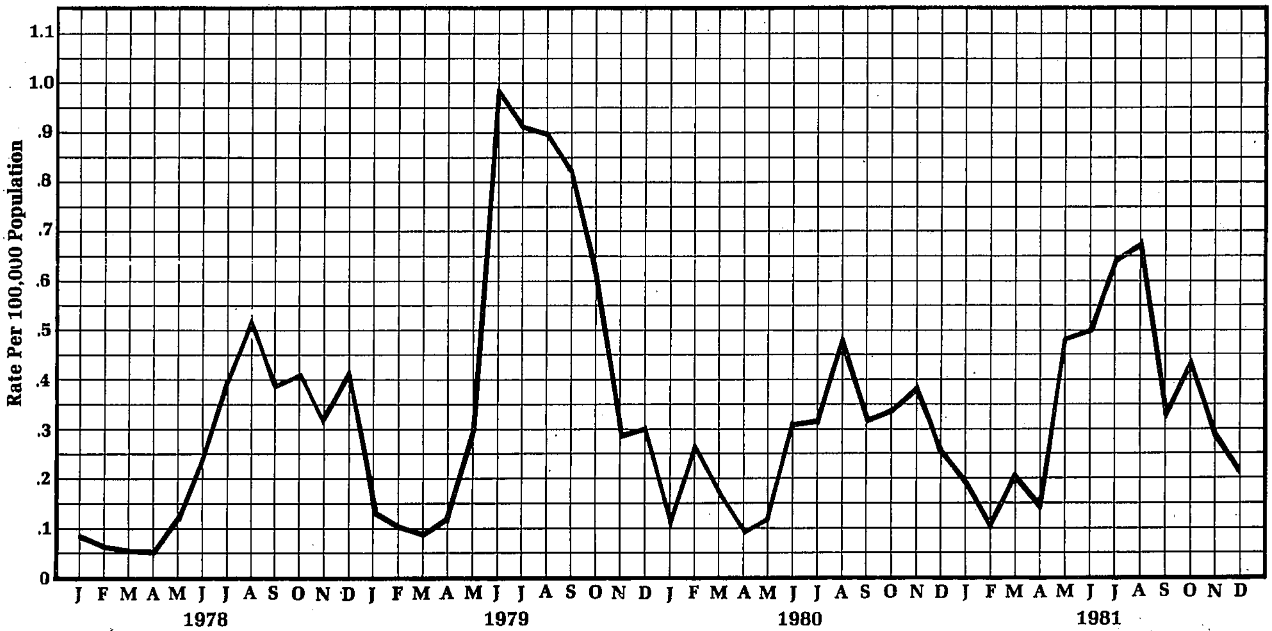
Aseptic meningitis is a common, rarely fatal clinical syndrome with multiple etiologies, but characterized by fever, headache, stiffness of the neck, and white cells in the cerebrospinal fluid (with negative bacterial cultures of the CSF). The term is often used interchangeably with viral meningitis. Viruses, primarily enteroviruses, account for most of the aseptic meningitis in the United States, particularly during the warmer months.

There were 622 reported cases of aseptic meningitis in Texas residents and only one resultant death in 1981. Eighty percent (495) of the cases were reported in the months from May through November (see Figure 3). Viruses were isolated from five cases during this period and all were enteroviruses: two echovirus type 9, and one each echovirus type 4, echovirus type 11, and coxsackievirus type B5. Cases were evenly distributed between males and females. Of the 622 cases, 338 (54.3%) were white, 164 (26.4%) Hispanic, 97 (15.6%) black, 4 (0.6%) Asian/Pacific Islander, and 1 (0.2%) American Indian; the racelethnicity of 18 cases (2.9%) was not reported.

The age distribution of cases is typical of the incidence of infection with enteroviruses (see Table 1). The prevalence of antibodies to enteroviruses increases rapidly with age, indicating early exposure to the viruses. The incidence rate of aseptic meningitis in infants was 75 cases per 100,000 population and declined steadily to less than one per 100,000 among persons 45 years of age and older. Eighty-eight percent (549) of the cases were less than 30 years old.

The overall incidence rate for Texas was 4.24 per 100,000, slightly higher than the 3.03 per 100,000 reported in 1980. Dallas and Tarrant Counties accounted for a major portion of that increase. Forty-seven percent (290) of the cases in 1981 were reported from those two counties for an incidence rate of 11.70 per 100,000 population in the two counties combined.

FIGURE 3
Reported Cases of Aseptic Meningitis in Texas
Per 100,000 Population
By Month of Report, 1978-1981



Urban areas typically report the majority of cases, but incidence rates for other metropolitan areas of the state were much closer to the incidence rate for the state as a whole: 3.23 in Bexar County, 2.21 in El Paso County, 5.80 in Harris County, and 1.61 in Travis County.

Elevated rates in an urban area are often indicative of an outbreak due to the appearance of an enterovirus that is new to that community. Enteroviral infections are readily transmitted via person-to-person contact or through consumption of contaminated food or water in the family or community setting. However, meningitic expression of these infections in family members is uncommon, and only seven out of 622 reported the involvement of more than one family member. There was one each from El Paso and San Angelo, two from Dallas, and three from Fort Worth. A variety of combinations of family members were involved—husband and wife(1), mother and son(1), father and son(2), and siblings(3).

TABLE 1

REPORTED CASES OF
ASEPTIC MENINGITIS IN TEXAS
PERCENT AND INCIDENCE RATE
BY AGE GROUP, 1981

Age Group	# of Cases	% of Cases	Incidence Rate*
<1	188	30%	75.44
1-4	72	12	6.46
5-14	123	20	3.92
15-44	212	34	3.42
45-64	13	2	0.48
65+	6	1	0.48
Unknown	8	1	—
TOTAL	622	100%	4.24

* per 100,000 population

BOTULISM

Four cases of infant botulism were reported to the Texas Department of Health during 1981. Each of these infants experienced symptoms characteristic of infant botulism: constipation, lethargy, poor feeding, difficulty swallowing, and generalized weakness, and each recovered following hospital stays which ranged from 14 to 47 days.

The first case occurred in June 1981 and involved an 11-week-old, white female from Morris County from whom type B botulinum toxin was isolated. The dietary history revealed that the child had been entirely breast fed and had none of the risk factors sometimes associated with infant botulism. Because the natural habitat of *Clostridium botulinum* is the soil, the source of the clostridial spores resulting in the child's illness could have been from the gardening activities in which the parents were involved at the family's residence.

Type A toxin was isolated from stool specimens of a seven-week-old, Asian male who became ill in July 1981. The child was initially hospitalized with a diagnosis of possible meningitis. After admission he experienced a respiratory arrest and was transferred to a larger hospital. There, the diagnosis of infant botulism was made after a history of honey ingestion was obtained from the parents.

In November, the third case of infant botulism was reported in Texas. Type A toxin was identified in stool specimens obtained from an 11-week-old, Asian male from Dallas County. A complete dietary history was not available, but is was reported that the child had been fed only a commercially prepared infant formula.

The fourth case occurred in November when a four-week-old, white male from Ochiltree County became ill. The child was diagnosed and treated in a Kansas hospital, and stool specimens submitted to the Centers for Disease Control revealed type A toxin. It was also reported that the child had occasionally been breast fed but was primarily fed with a commercially prepared infant formula.

The Texas Department of Health was notified of an additional case of infant botulism which occurred in August 1981. Even though the child was diagnosed and treated in Texas, he was not counted as a Texas case as he resided in California. This case was unusual in that it was only the second case of infant botulism ever recorded in the United States from whom stool specimens revealed both type B and type F botulinum toxins.

No cases of either food-borne botulism or wound botulism were known to have occurred within the state in 1981.

BRUCELLOSIS

Forty-five cases of brucellosis were reported to the Texas Department of Health during 1981. This represents a 61% increase over the 28 cases reported during 1980, and was the largest number of cases reported during any year since 1955, with the exception of 1976. (In 1976, an outbreak occurred in an El Paso County packing plant resulting in 43 cases which brought the statewide total to 77 cases.) Figure 4 shows the number of cases by county of report. No outbreaks were reported in 1981.

Brucellosis is a zoonosis, with human cases primarily occurring as a result of exposure to infected animals or animal products. The majority of cases with reported exposure can be divided into groups exposed occupationally or through consumption of unpasteurized dairy products from infected animals. The likely source of exposure was noted in 33 cases (73% of the total); 24 were reported as occupational, and 9 were associated with dairy products. Table 2 describes these cases.

The 12 remaining cases included nine (three males and six females) with no reported exposure, though isolation of *B. melitensis* from two suggested exposure to goat products. B. *canis* was isolated from two cases, an infant and a woman, both of whom had exposure to dogs. Interestingly, the woman's husband was also diagnosed with brucellosis though his infection was apparently unrelated to his wife's as *B. suis* was cultured from his blood. A non-occupational exposure to a herd of cattle under brucellosis quarantine was the likely source of his infection.

All four species of *Brucella* associated with human disease were isolated from cases in 1981: *B. melitensis* in six cases, B. *abortus* in three cases, B. *canis* in two cases, and B. *suis* in one case. All other cases were confirmed serologically.

Cases ranged in age from one to 64 years, with a median age of 34, and 86% of cases were in the 20-60 age group. Thirty-three cases were male and twelve were female. In contrast to 1979 and 1980, when males comprised 86% of cases, 73% of cases were male in 1981. The racial and/or ethnic distribution of cases classified 23 as white, 19 as Hispanic, 2 as black, and 1 Asian.

FIGURE 4
Reported Cases of Brucellosis* in Texas
By County of Residence, 1981

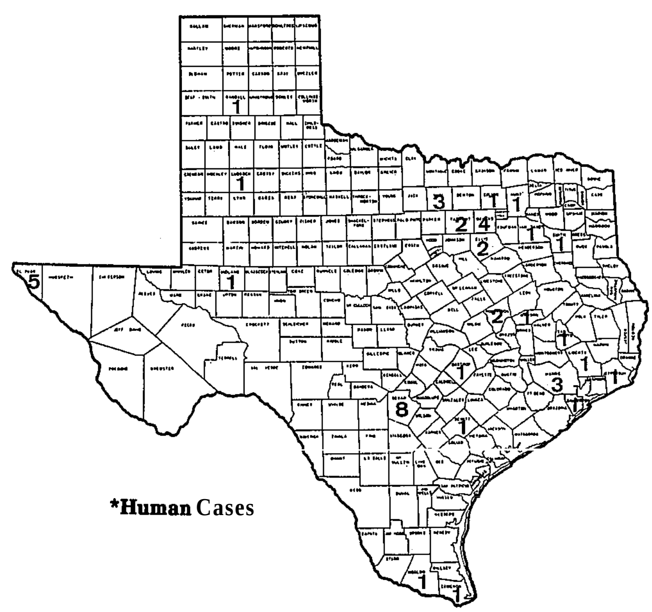


TABLE 2

REPORTED CASES OF HUMAN BRUCELLOSIS IN TEXAS
BY SEX AND TYPE OF EXPOSURE, 1981

TYPE OF EXPOSURE	MALE	FEMALE	TOTAL	% OF TOTAL
Occupational				
Rancher/Animal Raiser	9	1	10	22%
Packing Plant Associated	7	–	7	16
Veterinarian/Employee	4	–	4	9
Laboratory Acquired	1	–	1	2
Other Occupational Exposure	2	–	2	4
Unpasteurized Dairy Products	5	4	9	20
Other and Unknown Exposures	3	9	12	27
TOTAL	31	14	45	100%

CHICKENPOX

Varicella (chickenpox) is usually a mild, self-limited illness of young children. The infection is spread by respiratory secretions or direct contact with vesicle fluid. Virus enters the respiratory tract, multiplies locally or in regional lymph nodes, produces a primary viremia, and is disseminated by the blood to the internal organs. Further viral replication takes place followed by a secondary viremia and seeding of the cutaneous tissues. Fever occurs, followed within a day by a papular rash of the skin and mucous membranes. The total incubation period from exposure to onset of rash is generally 14 to 21 days. The papules become vesicular and are accompanied by itching. Natural infections are highly contagious, and the virus is present extracellularly in high titer in vesicle fluid of lesions.

A total of 10,824 cases of varicella was reported to the Texas Department of Health in 1981, an increase of 14% over the 9,478 cases reported in 1980. Chickenpox is reported to the Texas Department of Health on a weekly basis by numeric totals only. Cases were reported predominately in March, April, and May.

Four deaths due to varicella pneumonia occurred in Texas during 1981. Each individual, two males and two females, was 20 years of age or older (range 20 - 45). Three of the deaths occurred during the peak months of varicella activity, March and April. The fourth individual expired in October.

CHOLERA

Cholera is caused by those strains of the organism *Vibrio cholerae* which agglutinate in "01" antisera. These strains can result in the acute onset of intestinal disease characterized by severe diarrhea, sometimes vomiting, and fluid, electrolyte, and acid-base imbalances. However, many people with cholera can experience a much milder form of the disease. Antibiotics and supportive therapy are very effective in reducing morbidity.

Cholera is transmitted via the fecal-oral route through consumption of contaminated water, food, or seafood harvested from contaminated water. Cases of cholera are infrequent in countries with modern water and sewage sanitation. Because gastric acid is an effective barrier to cholera organisms, large numbers of the organisms must be ingested to cause illness. In persons with decreased gastric acidity (achlorhydria), fewer numbers of ingested cholera organisms can cause disease.

Between 1911 and 1980, only 12 cases of cholera were diagnosed in the United States. One of the cases occurred in a Port Lavaca, Texas, resident in 1973, and 11 infections were diagnosed in Louisiana residents in 1978. Cholera was not reported in Texas again until 1981 when three cases were diagnosed.

On May 7, 1981, a 42-year-old, black male residing in Jefferson County began having symptoms of malaise, anorexia, abdominal pain, and diarrhea. The next day he presented at a large university hospital emergency room with severe diarrhea and dehydration. Large amounts of fluids were needed to resusitate him. Following an 11-day hospitalization, during which time he was found to be achlorhydric, the patient was discharged.

On June 21, the second 1981 case, a 65-year-old, black male from Orange County, had a sudden onset of vomiting and diarrhea. Due to his initial refusal of medical treatment, this patient was not admitted to the hospital until he was severely dehydrated and unresponsive. The man had preexisting chronic illness which was further complicated by his cholera infection and eventually led to his death two weeks later. No source of exposure was found.

In September 1981, an outbreak of cholera occurred which resulted in a third 1981 cholera case in a Texas resident. The outbreak was the largest acute common source outbreak of cholera in the United States during the twentieth century and occurred in Jefferson County, Texas. Sixteen men developed cholera while working aboard an oil drilling rig. One additional man developed an asymptomatic infection. The outbreak was traced to contaminated drinking water and food prepared with that water. All of the men recovered. Only one of the cases resided in Texas, a 32-year-old, white male living in Jefferson County. The other 16 men were residents of Louisiana (14), Mississippi (1), and Alabama (1).

ENCEPHALITIS

A total of 91 cases of encephalitis was reported in Texas last year. Included in these reports were 26 cases due to the following viruses:

Herpes simplex: Thirteen cases were due to infection with herpes simplex virus. Seven of the patients died, resulting in a case-fatality ratio of 54%. Nine (75%) of the 12 cases for which age was known were 26 years old or younger. Two infants, a one-month-old girl and a four-month-old boy, developed herpes encephalitis although neither of the mothers had a history of herpes infection; one child died. These were the only two cases of encephalitis that were Asian. Cases of herpes encephalitis were equally distributed throughout the year and among males and females.

Varicella-zoster: A four-year-old female developed encephalitis following chickenpox. Four additional cases were due to recurrent infections with varicella-zoster virus. These were all adult females aged 52, 82, and 87, and one case with age not reported.

Enteroviruses: Six different enterovirus strains were isolated from eight of the reported cases of encephalitis. There were two cases each caused by echovirus type 9 and echovirus type 5, and one case each caused by echovirus type 11, echovirus type 32, coxsackievirus type A9 and coxsackievirus type B5. All of the seven cases for which age was reported were 20 years of age or younger. Seven (87.5%) of the cases occurred in late summer (July through September), and one occurred in March; this is the typical seasonal distribution of enterovirus infections in southern temperate climates. Three (37.5%) cases were females, and five (62.5%) were males.

The causative agent was unknown for the 65 remaining cases of encephalitis. Cases were reported in all age groups and ranged in age from four months to 84 years. Cases were equally distributed among males (53%) and females (47%). There were ten deaths for a case fatality ratio of 15.6%.

ENTERIC INFECTIONS

Salmonellosis, Excluding Typhoid Fever

Salmonellosis is an acute gastrointestinal disease characterized by sudden onset of fever, abdominal pain, and diarrhea lasting several days. Nausea and vomiting are common early symptoms but are seldom as prominent as the colicky abdominal pain and diarrhea that rapidly follow. Infection is usually limited to acute gastroenteritis but on occasion may present as an enteric fever similar to typhoid fever or as a focal infection with or without abscess formation. A small percentage of persons with *Salmonella* gastroenteritis may continue to excrete the organisms in the stool for prolonged periods, that is, become chronic asymptomatic carriers for a year or more after their original episode of illness.

Ordinarily, deaths resulting from *Salmonella* infections are uncommon except in the very young, the very old, or the debilitated. Included among the seven deaths attributed to salmonellosis in Texas last year, were five patients who developed septicemia and one who developed pneumonia as a result of their illnesses; these patients ranged in age from 51 to 93 years.

Salmonellosis is transmitted by the ingestion of organisms in food which has been contaminated by feces of an infected person or animal, or by the ingestion of contaminated raw eggs or egg products, dairy products, meats or meat products, or poultry. Infections have also been traced to certain pharmaceutical products and dried egg whites.

A total of 2,612 cases of salmonellosis was reported in Texas during 1981. The race and/or ethnicity of these cases included 846 whites (32.4%), 743 Hispanics (28.4%), 178 blacks (6.8%), and 16 Asians (0.6%); the races of the remaining 829 individuals (31.7%) were not indicated. More than half of the cases occurred in children under ten years of age, with the largest number (686) reported in infants under one year of age. (The distribution of cases by age group may be found in Table V, Appendix.) Cases were evenly distributed between males and females.

The numbers of cases and incidence rates of salmonellosis in those counties with populations of 200,000 or greater are shown in Table 3. The incidence rates of salmonellosis attributed to individual counties

TABLE 4

REPORTED SALMONELLA SEROTYPES*
TEXAS, 1981

Serotype (Species *Enteritidis*)	No. of Isolates	No. of Isolates	Cumulative %
typhimurium	414	22.5%	22.5%
newport	302	16.4	38.9
javiana	146	7.9	46.8
agona	86	4.7	51.5
infantis	84	4.6	56.1
heidelberg	75	4.1	60.2
montevideo	66	3.6	63.8
oranienburg	56	3.0	66.8
enteritidis	46	2.5	69.3
muenchen	40	2.2	71.5
72 other serotypes	522	28.4	99.9
TOTAL	1,837	99.9%	

*exclusive of ***S. typhi***

varied greatly throughout the state because of differences in reporting procedures in local areas.

Eighty-two different ***Salmonella*** serotypes were reported by the Texas Department of Health, Bureau of Laboratories, during 1981. The ten most frequently isolated serotypes accounted for 71.6% of the total isolations; this information is presented in Table 4. The most common serotype reported was again ***Salmonella typhimurium*** and represented 22.5% of the total isolations. Since the morbidity information on salrnonellosis in Texas included these laboratory data as well as reports received through the weekly reporting system, the serotypes are known for 1,837 (or 70.3%) of the cases reported in 1981.

Shigellosis

Shigellosis is an acute bacterial disease characterized by fever and cramping abdominal pain followed by nausea, vomiting, diarrhea, and tenesmus. The diarrhea may be streaked with blood and mucus which, under microscopic examination, is seen to contain large numbers of inflammatory cells. In 1981, 2,299 cases of the disease were reported in Texas.

As in previous years, cases were evenly distributed between males and females, and Hispanics accounted for the largest single ethnic group with 51% of the reported cases statewide. The majority (58%) of cases was in children under ten years of age, and the largest number of cases occurred again in the one- to four-year-old age group with 820 cases (36%) having been reported. The numbers of cases and incidence rates for shigellosis in those counties with populations of 200,000 or greater are shown in Table 3.

TABLE 3

REPORTED CASES AND INCIDENCE RATES OF
SALMONELLOSIS AND SHIGELLOSIS FOR
SELECTED COUNTIES IN TEXAS, 1981

		SALMONELLOSIS		SHIGELLOSIS	
COUNTY	POPULATION	# CASES	RATE*	# CASES	RATE*
Bexar	1,020,174	222	21.76	201	19.70
Cameron	220,024	45	20.45	57	25.91
Dallas	1,594,233	239	14.99	216	13.55
El Paso	498,327	62	12.44	215	43.14
Harris	2,499,293	817	32.69	654	26.17
Hidalgo	298,240	40	13.41	68	22.80
Jefferson	254,542	36	14.14	11	4.32
Lubbock	216,778	49	22.60	65	29.98
Nueces	275,182	50	18.17	83	30.16
Tarrant	883,671	108	12.22	60	6.79
Travis	435,412	87	19.98	112	25.72
All others	6,483,704	861	13.28	557	8.59
TEXAS	14,679,580	2,616	17.82	2,299	15.66

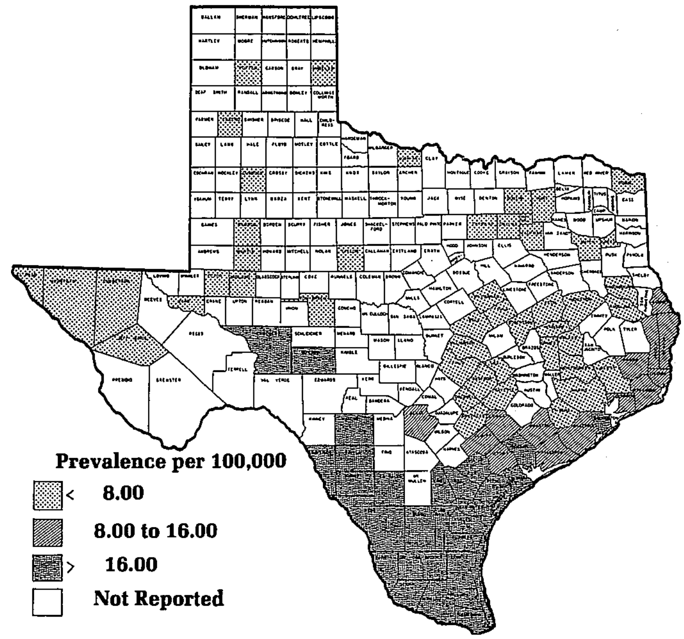
*per 100,000 population

Reports of shigellosis are received primarily through the weekly morbidity reporting system. However, all *Shigella* isolates reported by the Bureau of Laboratories are included in the morbidity files. In 1981, shigellosis cases discovered solely through this review of laboratory data accounted for 22% of the total cases in Texas; that is, these cases were not reported through the routine reporting system.

Laboratory data are available on almost half (49.3%) of the reported cases in 1981. The Texas Department of Health, Bureau of Laboratories, reported the following isolations of *Shigella* species: ***S. sonnei*** — 664 isolates **(58.6%)**, S. *flexneri* — 383 isolates **(33.8%)**, ***S. boydii*** — 74 isolates **(6.5%)**, and ***S. dysenteriae*** — 12 isolates **(11%)**.

Shigellosis is transmitted by consumption of food, milk, or water contaminated by an infected patient or carrier or through direct hand-to-mouth transfer of contaminated material. Outbreaks of the disease are common under conditions of crowding and poor sanitation. In 1981, numerous outbreaks occurred among households, and an outbreak which affected 23 children was **reported** in **Denton** County in a facility for the **mentally** retarded.

FIGURE 5
Prevalence of Hansen's Disease in Texas By Reporting County



Source: Texas Hansen's Disease Registry

HANSEN'S DISEASE

Hansen's disease (leprosy) is a chronic **intracellular** infectious disease caused by ***Mycobacterium leprae.*** Though rarely fatal, its ability to produce extensive disfigurement generates considerable fear and revulsion for the disease. The incubation period may be as long as several years, and susceptible persons acquire the disease through close physical contact with an infected person over an extended period of time. Even with such a close contact, most people will not contract the disease. Approximately 90% of individuals have a natural immunity.

Leprosy is classified on the basis of the extent of infection. In the tuberculoid type, relative resistance in the host limits involvement to a few nerves and **skin** areas. Generalized infection occurs in the lepromatous type due to dissemination of the bacilli without limit. A spectrum of intermediate disease is described as borderline (dimorphous). Half of all Texas cases are lepromatous; there are 20% each of the tuberculoid and the borderline classifications, and 10% remain unclassified.

In 1981, Texas reported 33 new cases of Hansen's disease, ranking fourth highest among the states. This represents an incidence of **0.23** cases per 100,000 population and indicates no change in rate from previous years. Figure 5 illustrates the prevalence of Hansen's disease throughout the state.

Prior to 1941, the only drug treatment for leprosy was **chaulmoogra** oil. More recently, dapsone (DDS) has become the standard medical treatment. Combined therapy of DDS with new generation pharmaceuticals such as rifampin has overcome even resistant strains of ***M. leprae.*** Leprosy is today a curable disease, with patients **taking** medication for two years to life according to their type of infection. There are currently 207 Texans on medication and an additional 201 who no longer require medication but remain under surveillance. (See Table 5.)

TABLE 5

CURRENT MEDICATION OF ACTIVE HANSEN'S DISEASE CASES IN TEXAS

DRUG REGIMEN	#CASES	% **OF TOTAL**
DDS	180	87.0%
DDS/rifampin	8	4.0
rifampin/ethionimide	2	1.0
rifampin	1	0.5
clofazimine (B663)	8	4.0
Rx not identified	8	3.5
TOTAL	207	100.0%

Ten cases were reported sulfone resistant (5.7%).

Source: Texas Hansen's Disease Registry

TABLE 6

DEMOGRAPHICS OF HANSEN'S DISEASE IN TEXAS

SEX	Male 58%	Female 42%					
AGE GROUP	11–20	21-30	31-40	41-50	51-60	61-70	>70
	3%	7%	12%	16%	19%	23%	19%
RACE/ETHNICITY	White	Hispanic	Black	American Indian	Asian		
	22.8%	60.6%	12.9%	.1%	3.7%		

Source: Texas Hansen's Disease Registry

As shown in Table 6, men are more prone to develop Hansen's disease than women. Older persons are more likely to contract the disease than the young, and Hispanics outnumber all other ethnic groups in total number of cases.

Historically, the endemic foci in Texas for Hansen's disease have been the ethnic communities founded by European immigrants. This pattern has undergone a shift over the last 50 years to the present predominance of Hispanic communities in coastal and south Texas. Hansen's disease remains indigenous to Texas as an infectious disease of very low communicability, with an increasing number of new cases being accounted for each successive year by importation from outside the country.

HEMOPHILUS INFLUENZAE MENINGITIS

The most common cause of bacterial meningitis in the United States is ***Hemophilus influenzae.*** The disease is characterized by fever, vomiting, irritability, lethargy, and signs of meningeal irritation such as bulging fontanelles in infants, and nuchal rigidity and severe headaches in older children and adults. Five to 10% of all cases are fatal, and the majority of deaths occurs within the first few hours of hospitalization.

The reporting of cases of meningitis caused by ***H. influenzae*** is not required by law in Texas, but during 1981, 221 case reports were voluntarily submitted to the Texas Department of Health from 56 counties across the state. Those agencies which voluntarily reported ***H. influenzae*** meningitis cases did so consistently throughout 1981. Because of this, the data presented here are only representative of certain areas and not of the state as a whole. The majority (54%) of cases was reported in the larger metropolitan areas, but cases were widely scattered throughout the state as illustrated in Figure 6.

The age distribution of cases in Texas was typical of national reports of ***H. influenzae*** meningitis the majority (85%) of cases occurred in children under three years old. The highest age specific incidence rate (43.3/100,000) was in children less than one year of age (see Table 7). The rate dropped to 8.3/100,000 for children between the ages of one and four. Most national reports have indicated a preponderance of male cases, but Texas cases were fairly evenly distributed between males (52%) and females (48%). There have also been reports of racial differences in national incidence rates with blacks having up to four times as many cases as whites. This predominance of cases among blacks was not demonstrated in Texas in 1981. The race/ethnicity of 214 cases included 114 whites, 67 Hispanics, and 33 blacks; race was not indicated for the remaining seven cases. The incidence rates and case-fatality ratios were highest for non-white children less than one year of age. After one year of age, the rates did not differ and the number of deaths in some groups was too small to com-

FIGURE 6
Reported Cases of *Hemophilus* influenzae Meningitis in Texas By County of Residence, 1981

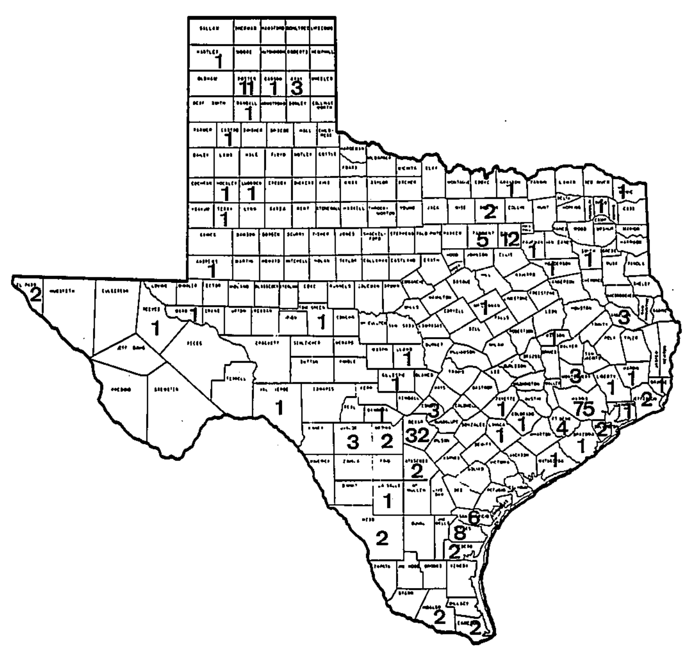


TABLE 7

REPORTED CASES, INCIDENCE RATES, DEATHS, AND CASE-FATALITY RATIOS OF HEMOPHILUS INFLUENZAE MENINGITIS IN CHILDREN BY RACE/ETHNICITY, TEXAS, 1981

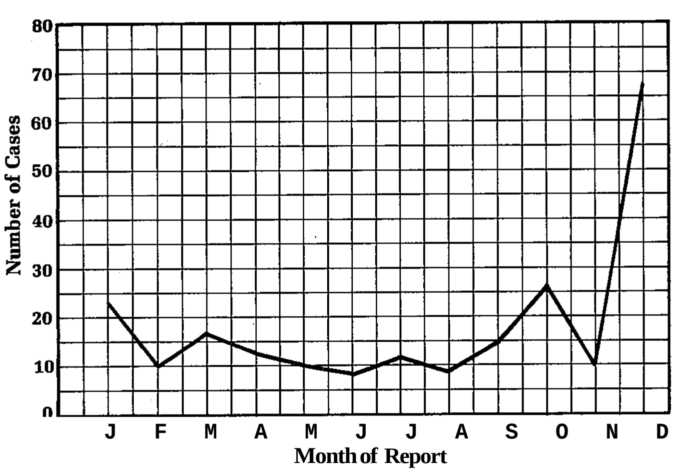
	0-1 Year				1-4 Years			
Race/Ethnicity	# of Cases	Rate*	# of Deaths	CFR	# of Cases	Rate*	# of Deaths	CFR
White	44	31.4	4	9.1%	56	8.9	5	8.9%
Hispanic	42	56.8	7	16.7	22	6.6	1	4.5
Black	17	48.4	3	17.6	13	8.4	—	—
Unknown	5	—	—	—	1	—	—	—
Total	108	43.3	14	13.0%	92	8.3	6	6.5%

*rate per 100,000 population
CFR = case fatality ratio

pare. The difference in mortality in children less than one year of age may be related to the higher infant mortality rates for all causes of death reported annually for blacks and Hispanics in Texas.

In contrast to national reports which indicate that peak periods of the disease occur during the fall and spring months, Texas reported the highest incidence in the fall and winter months (Figure 7).

FIGURE 7
Reported Cases of *Hemophilus* influenzae Meningitis in Texas By Month of Report, 1981



The case fatality ratio in Texas last year was 9.5%. The 21 patients who died as a result of H. *influenzae* meningitis included 14 infants under one year of age, 6 children between one and two years of age, and one 19-year-old, and males outnumbered females by a ratio of 2.5:1.

INFLUENZA AND FLU-LIKE ILLNESS

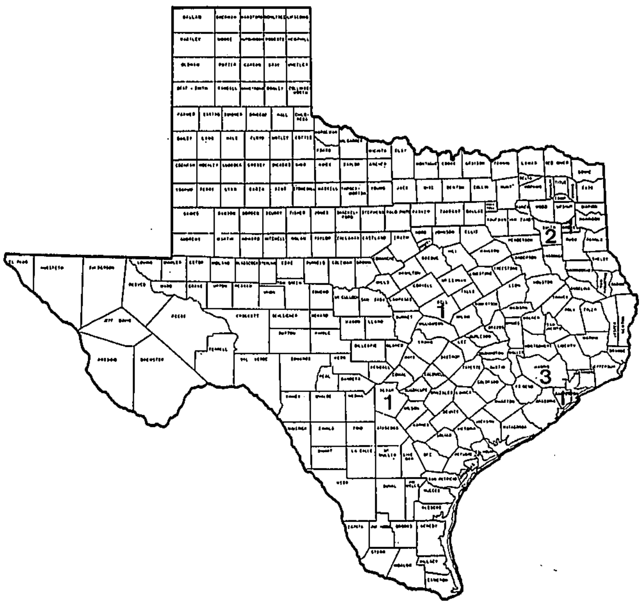
As in previous years, influenza and influenza-like illness were reported to the Texas Department of Health through two systems: the routine morbidity reporting system and a special Influenza Surveillance System coordinated by the national Centers for Disease Control. These systems, however, were not mutually exclusive. Since more counties reported cases of influenza and influenza-like illness through the routine reporting system than through the special surveillance system, the more complete data, which were published in "Texas Morbidity This Week" during 1981, are discussed.

Cases of influenza and influenza-like illness were reported to the Texas Department of Health weekly by numeric totals only. In 1981, there was a total of 143,955 cases reported; this represented a 44.7% increase over the 99,292 cases reported in 1980. The number of deaths (133) in Texas during 1981 due to influenza was 90% higher than the 70 deaths reported in 1980. The number of reported cases peaked in January in response to an A/Bangkok/79 epidemic which occurred during the 1980-1981 influenza season.

Laboratory confirmation of diagnosis was obtained for only a small percentage of the cases in 1981. Influenza A/Brazil/78 and A/Bangkok/79 viruses were isolated from cases in January and February of 1981. A few sporadic influenza B/Singapore/79 viruses were isolated in November and December.

The level of influenza morbidity in Texas corresponded with that reported on the national level. The nation also experienced an influenza A/Bangkok epidemic in January 1981.

FIGURE 8
Reported Cases of Leptospirosis in Texas
By County of Residence, 1981



LEPTOSPIROSIS

Leptospirosis is a zoonosis, with wild rodents and domestic animals being the principal reservoirs associated with human cases. Infection generally follows contact with infected animals (domestic and wild) **and/or** water (particularly stagnant) contaminated by urine from infected animals.

Nine cases of leptospirosis, including one death, were reported in Texas during 1,981. This represents a 200% increase over the 1980 **total of** three cases. There was no reported association among **1981** cases, and the increase may reflect better reporting. Cases resided in six counties, with Harris County reporting three cases, Smith County reporting two cases, and four other counties reporting one case each (see Figure 8). Reported ages of cases ranged from 10 to 75 years, six being male and three female, and six cases were reported as white, two as black, and one as Hispanic. Probable exposure to **lep**tospira included household pets (cats and dogs) in three cases, stagnant water and domestic and wild animals in two cases, a rat-infested jail in one case, and in three cases no exposure history was reported. The earliest reported onset occurred in March, and the latest in November, with two-thirds of the cases having onset during the summer months, June through August.

The one death occurred in a 73-year-old, white female from Galveston County who died in September 1981. The Bureau of Epidemiology did not learn of this individual until March 1982 when mortality data were provided by the Bureau of Vital Statistics. No exposure history was available for this case.

MALARIA

Malaria is a parasitic disease which is usually transmitted through the bite of an infected female anopheline mosquito. On rare occasions, malaria may also result from congenital transmission or from the transfusion of infected blood products. An understanding of the developmental cycles of, and fundamental differences between, the four species responsible for the disease (Plasmodium falciparum, *P. vivax,* P. malariae, and P. *ovale)* is essential for adequate diagnosis and treatment. The 87 cases of malaria reported in Texas during 1981

TABLE 8

Distribution of Imported Malaria Cases by
Geographic Origin of the Parasite
Texas, 1981

Geographic **Origin**	P. **vivax**	P. **falciparum**	P. **malariae**	P. ovale	Not Specified	**TOTAL**
Africa	5 (2)	10 (7)	1 (1)	—	2 (1)	18 (11)
Central America*	18 (5)	1 (1)	—	1	1 (1)	21 (7)
India	12 (2)	—	—	—	—	12 (2)
Mexico	2 (1)	—	1	—	3 (3)	6 (4
Southeast Asia	17	1	1	—	2	21
Multiple Exposures	3 (1)	—	—	—	—	3 (1)
Not Specified	2 (1)	—	—	1	1	4 (1)
TOTAL	59 (12)	12 (8)	3 (1)	2	9 (5)	85 (26)

*excluding Mexico

Note: Numbers in parentheses are Texas residents who acquired their infections while traveling.

reflect the worldwide resurgence of this disease in developing nations. **Eighty-five** of the cases (97.7%) were acquired outside of the United States: 26 cases were Texas residents who traveled to other countries for business or pleasure; 54 were foreign visitors, students, or refugees from countries in which malaria is endemic (13 were immigrants from El Salvador, 13 were immigrants from Vietnam); and citizenship was not specified for five cases. The two cases who acquired malaria within Texas were a onemonth-old, Asian male with congenital P. *vivax* malaria and a 47-year-old, white male with transfusion associated P. ***falciparum*** malaria. There were no reported cases of malaria transmission by the bite of an infected mosquito within Texas. This potential exists, however, since appropriate mosquito vectors are common in many areas of the state.

The cases ranged in age from one month to 68 years. Cases were normally distributed around a peak age of 20-29 years (32cases). Fifty-six cases were male, and 31 were female. The geographic distribution reflected the population centers of the state, especially those attracting foreign visitors or immigrants (Harris **County-46** cases, Dallas County-16 cases, rest of state-25 cases). There were no reported deaths in Texas due to malaria last year.

The majority of cases was due to P. ***vivax*** (60 cases), followed by P. ***falciparum*** (13 cases), ***P. malariae*** (3 cases), and P. ***ovale*** (2 cases). The species was not determined or not reported in nine cases. The geographic origin of imported cases is presented in Table 8. It is worth noting that although Texas residents accounted for only 30.6% of the imported cases of all types of malaria, they were responsible for 66.7% (8112)of the P. ***falciparum*** cases reported. ***P. falciparum*** is the most serious type. Furthermore, seven of these eight Texas residents acquired their infection in Africa and seven were not taking recommended malaria prophylaxis. Overall, 21 of the 26 Texas residents who acquired their malaria while traveling were not taking appropriate **prophylaxis.**

A review of the treatment histories for the 81 cases for which data were available indicated that as many as 15 (18.5%)did not initially receive appropriate treatment of their infection.

MENINGOCOCCAL INFECTIONS

Meningitis is the most commonly reported form of **meningococcal** infection, but the category also includes septicemia, arthritis, and other systemic diseases caused by the organism ***Neisseria meningitidis.*** There were 327 cases of **meningococcal** infections reported in Texas residents in 1981, a 126% increase over the 145 cases reported in 1980. **The age** distribution of cases was typical, with 57% of the cases occurring in children four years of age or younger (Table9). The case fatality ratio was highest for the very young population, less than one year of age, and for persons 45 years of age and older.

For most age groups and for all the cases, the **case**-fatality ratio was lower in 1981 than in 1980. This may be due to a variety of real causes or an artifact of improved reporting. The method of determining the number of deaths does not vary from year to year as **it** is based on death certificates **filed with** the Bureau of Vital Statistics, Texas Department of Health. However, the number of cases reported can vary and improved reporting of cases, particularly less severe cases, increases the denominator and lowers the calculated fatality ratio. In

TABLE 9

REPORTED CASES OF MENINGOCOCCAL INFECTIONS AND DEATHS FOR MALES AND FEMALES BY AGE GROUP, TEXAS, 1981

	MALE			FEMALE			TOTAL		
AGE GROUP	# CASES	# DEATHS	CASE FATALITY RATIO	# CASES	# DEATHS	CASE FATALITY RATIO	# CASES	# DEATHS	CASE FATALITY RATIO
<1	35	7	20.%	29	5	17.2%	63	12	18.8%
1-4	77	6	7.8	47	1	2.1	124	7	5.6
5-14	13	0	—	12	1	8.3	25	1	4.0
14-44	36	4	11.1	39	4	10.2	75	8	10.6
45-64	8	2	25.0	11	2	18.1	19	4	21.0
65+	5	1	20.0	7	1	14.2	12	2	16.6
Not Stated	4	0	—	4	0	—	8	0	—
TOTAL	178	20	11.2%	150	14	9.4%	327	34	10.4%

the early months of 1981, the Bureau of Epidemiology had made a concerted effort to encourage reporting of cases and serotypes of the responsible organisms. This was related to the fact that Houston appeared to have an increased number of cases, an outbreak, as early as January.

As a result of the increased surveillance activities, serotypes were available for 203 (62%) of the causitive organisms in 1981. Of the organisms typed, 4 (2%) were type A, 90 (44%) were type B, 79 (39%) were type C, 17 (8%) were type W135, 5 (2%) were type Y, and 8 (4%) were not typeable. The proportion of organisms that were types W135 and Y did not differ significantly from 1979 or 1980. Type A, however, had not been reported in 1979 or 1980. Serotype B and C accounted for almost an equal proportion of cases in 1981, whereas B had accounted for 80% of the organisms in 1980 and 1979.

The incidence rate of meningococcal infection was lowest in Hispanics (1.57 cases per 100,000 population) and highest in blacks (3.34 per 100,000). The rate in whites and **all** others was 2.24 per 100,000, and for Texas as a whole it was 2.23 per 100,000. This was the highest incidence rate per year since 1955 when it was 2.4 cases per 100,000. The reason for the disparity in incidence rates between **racial/ethnic** groups is not clear.

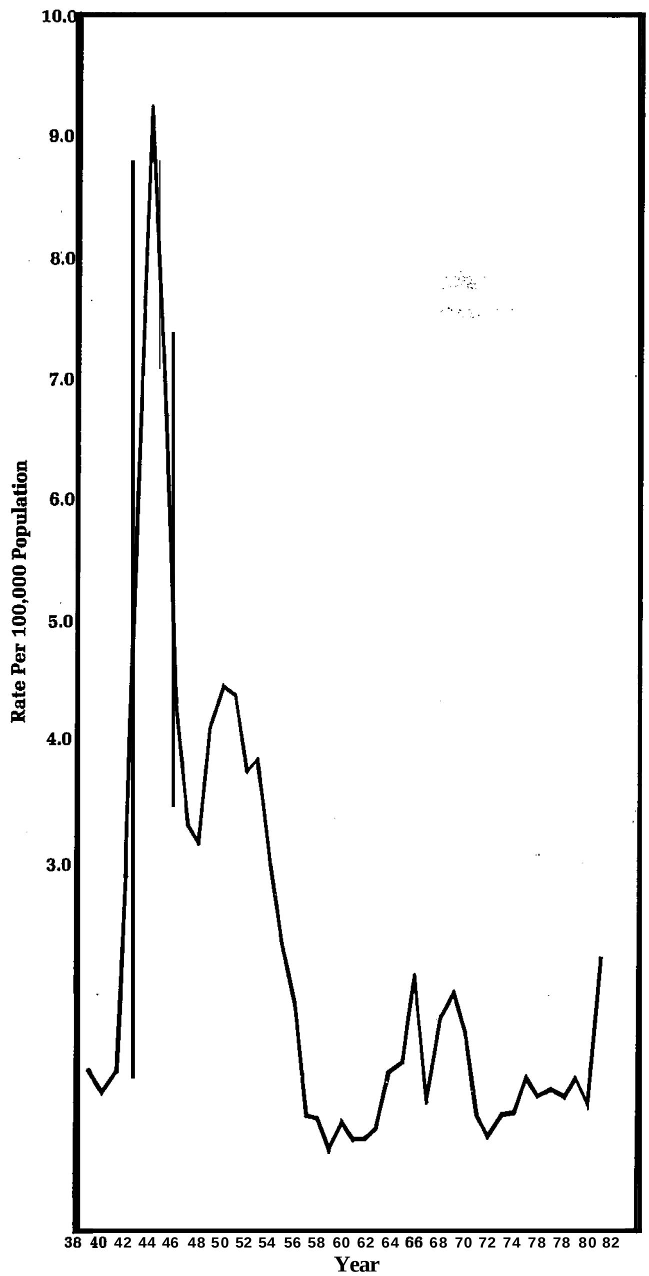
Incidence data for Texas, available from 1938 and illustrated in Figure 9, reveal a distinct pattern of bimodal peaks of two or more cases per 100,000, separated by periods of approximately a decade each during which the incidence fluctuated around one case per 100,000. The peak periods may correspond to changes in the predominant serotype of the **meningococcal** organisms causing disease in the community. The peak in 1981 corresponded with a 31% increase in the proportion of cases caused by serotype **C.**

The sex distribution of cases and fatalities in 1981 was unusual only for children between the ages of one and four years (Table 9). There were significantly more males in this group **(p=.0518)**, and the case-fatality ratio was higher **(p=.188)**. **A** reason for the preponderance of males among those infected is not known.

Seven families in Texas experienced multiple cases of meningococcal meningitis during 1981 six families had two cases each, and one family had three cases. The cases were siblings in all but one family where the cases were a mother and her daughter. The same serotype of the organism was responsible for the infections in five families; three were type C, and two were type B. In one instance, the organism was not serotyped for either case, and in the remaining family, the first case had a serotype B and the other was not typeable.

The interval between the onsets of illness of the paired cases varied, but was usually short. In two families, the cases had onsets the same day; three families reported onsets a day apart; one family reported an interval of nine days between the two dates of onset; and in one family, the cases occurred five and **one-half** months apart. In the family with three cases, there were two days between the first and second cases and one day between the second and third cases.

FIGURE 9
Reported Cases of Meningococcal Infections In Texas Per 100,000 Population, 1938-1981



PSITTACOSIS

Psittacosis (ornithosis) is primarily a disease of birds but is readily transmissible to man. The causative agent, ***Chlamydia psittaci,*** was once thought to be transmitted to man only by psittacine birds (parrots, parakeets, cockatiels, etc.). It is now known that the disease affects many other species of birds including turkeys, chickens, ducks, pigeons, sea gulls, egrets, and canaries. Persons at risk of psittacosis are workers at poultry farms or poultry processing plants, aviaries, or pet shops.

Affected birds demonstrate varying degrees of illness ranging from the asymptomatic carriers to a fulminant, rapidly fatal disease. The secretions and droppings of infected birds are teeming with chlamydiae and remain highly infectious even after drying.

The route of entry into humans is nearly always through inhalation of aerosolized fresh excreta or of dust from dessicated bird droppings, but occasionally, infection is acquired from the bite of an infected bird. Person-to-person transmission is rare but has occurred and may be a matter of concern for hospital personnel caring for patients with psittacosis.

The disease in man is characterized by an incubation period of 7-14 days followed by symptoms of sore throat, fever, myalgia, chills, malaise, weakness, non-productive cough, photophobia, and headache. The fever may rise to as high as 105°F during the first week of illness and is often accompanied by a relative bradycardia. The headache is generally diffuse but is frequently severe and may dominate the clinical picture. In severe cases, nausea, vomiting, mental confusion, delirium, or stupor may occur.

There were nine cases of psittacosis reported to the Texas Department of Health during 1981. Among the ill were six males and three females with ages ranging from 21 to 64 years. Cases were fairly evenly scattered throughout the year except for one case which had its onset in December 1980. The statewide distribution of cases appeared to be random with no apparent geographic clustering. Cities reporting one case each were Houston, Tyler, Ft. Worth, Lufkin, Galveston, Hereford, Amarillo, San Antonio, and Austin. Three cases were owners of aviaries, two owned pet shops selling various birds, two had been exposed at the home of a friend who raised birds, one was a pigeon breeder, and one had owned a parrot that had died (presumably of psittacosis) shortly after being purchased. The illness, in most cases, consisted of moderate fever (102-103°F), cough, malaise, myalgia, headache, and sore throat. The diagnoses were made on a serologic plus clinical basis in eight cases and on clinical grounds alone in the ninth case. Six out of the nine cases received some form of tetracycline therapy during the course of treatment; all nine recovered.

RABIES IN ANIMALS

The Texas Department of Health Laboratory and the El Paso, Houston, and San Antonio Health Department Laboratories examined a total of 9,832 specimens for rabies representing over 45 species of animals during 1981. (This information is provided in Table 10.) This resulted in 698 laboratory confirmed cases of animal rabies reported in Texas last year, a decrease of 247 (or 26%) from the 945 cases reported in 1980.

TABLE 10

NUMBER OF HEADS EXAMINED FOR RABIES
BY LABORATORY SITE AND SPECIES OF ANIMAL, 1981

Laboratory Site	Skunk	Fox	Bat	Raccoon	Dog	Cat	Cow	Horse	Other*	Total
Austin	778	55	328	312	1638	2166	174	110	700	6261
San Antonio	42	1	34	19	186	225	4	—	54	565
El Paso	29	1	25	—	161	81	3	—	18	318
Houston	187	3	329	88	800	893	20	10	358	2688
TOTAL	1036	60	716	419	2785	3365	201	120	1130*	9832

*Other (defined by species)

Antelope—1	Chipmunk—1	Goat—19	Mole—7	Owl—1	Rat—226
Armadillo—6	Coyote—33	Gopher—16	Monkey—2	Pig—4	Rodent—4
Badger—1	Deer—7	Guinea Pig—3	Mouse—80	Porcupine—1	Sheep—15
Bear—1	Donkey—2	Hamster—17	Muskrat—1	Prairie Dog—5	Squirrel—227
Beaver—2	Ferret—46	Javelins-6	Nutria—10	Rabbit—78	Weasel—1
Bobcat—16	Gerbil—8	Mink—3	Opossum—217	Raccoon—6	Wolf—7

TABLE 11

LABORATORY CONFIRMED RABIES CASES IN TEXAS
DOMESTIC AND WILD ANIMALS
1981 AND 1980

	NUMBER OF CASES		% OF TOTAL DOMESTIC		% OF TOTAL RABIES CASES	
DOMESTIC ANIMALS	**1981**	**1980**	**1981**	**1980**	**1981**	**1980**
Dogs	12	46	17.4%	34.6%	1.7%	4.9%
Cats	22	34	31.9	25.6	3.2	3.6
Cows	27	32	39.1	24.0	3.9	3.4
Horses	8	21	11.6	15.8	1.1	2.2
Total Domestic Animals	69	133	100.0%	100.0%	9.9%	14.1%
WILD ANIMALS						
Skunks	515	643	81.9%	79.2%	73.8%	68.0%
Bats	79	95	12.6	11.7	11.3	10.0
Foxes	25	46	4.0	5.7	3.6	4.9
Other	10	28	1.6	3.4	1.4	3.0
Total Wild Animals	629	812	100.1%	100.0%	91.1%	100.0%
TOTAL ALL ANIMALS	698	945				

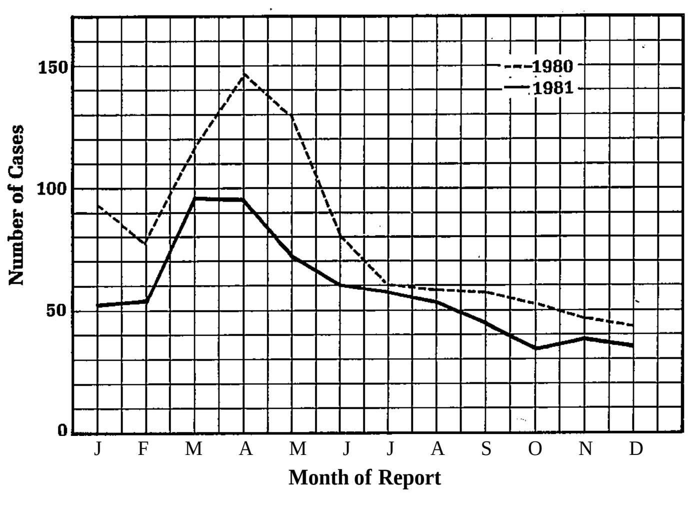
The species which accounted for the largest numbers of submissions for rabies examinations were dogs and cats. Of the 2,785 dogs and 3,365 cats submitted for testing in 1981, only 12 dogs and 22 cats were found positive for rabies. Compared with the 1980 figures of 46 dogs and 34 cats this represents decreases of 74% and 35%, respectively.

Skunks continued to be the species most often positive for rabies in 1981. Of the 1,036 skunks' heads submitted for testing, 515 were positive for rabies and represented 73.8% of the total number of animal rabies cases. Table 11 provides the numbers and percentages of confirmed rabies cases each species contributed to the total last year. Domestic animals contributed 9.9% of the total positive cases, and wildlife species positive for rabies resulted in 90.1% of the total.

Cats are especially important as potential vectors of human rabies because they are a **link** between wildlife rabies and man. There are two main reasons for this. Cat owners are frequently lax in having these animals vaccinated against rabies. Also, cats naturally tend to share the same ecologic niche as skunks. Both cats and skunks are semi-domesticated in many cases, and both hunt rodents and insects. These animals frequently share the same territories, especially in suburban or rural areas. Consequently, barnyard cats may contract rabies from rabid skunks. **Semi-wild** cats **normally** avoid contact with humans, but with the behavior changes characteristic of rabies, the cats may become tame enough to be caught. As the rabies progresses, they may revert to an aggressive behavior and attack humans. Alternatively, rabid cats may become **paralysed;** people who think that the cats have been injured and try to render aid, may be bitten. This emphasizes the importance of having cats vaccinated against rabies. Vaccinated animals provide a buffer between! rabid wildlife and the human population.

Figure 10 illustrates the number of animal rabies cases by month both for 1980 and 1981. The highest activity

FIGURE 10
Reported Cases of Animal Rabies **in** Texas
By Month of Report, 1980-81



for both years was reported from March through June.

There were 147 counties in Texas reporting one or more animal rabies cases during 1981; this distribution is provided in Figure 11, and Figure 12 illustrates those counties reporting rabies in domestic animals.

FIGURE 11
Confirmed Cases of Animal Rabies in Texas By County of Occurrence, 1981

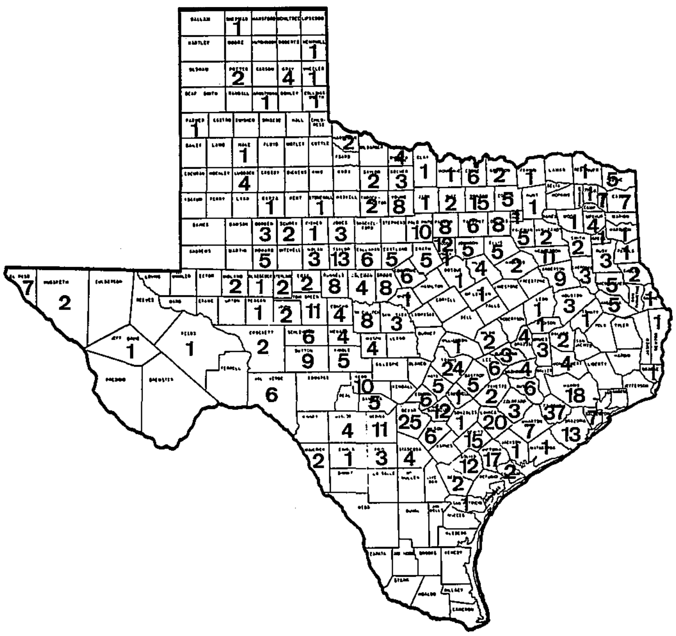
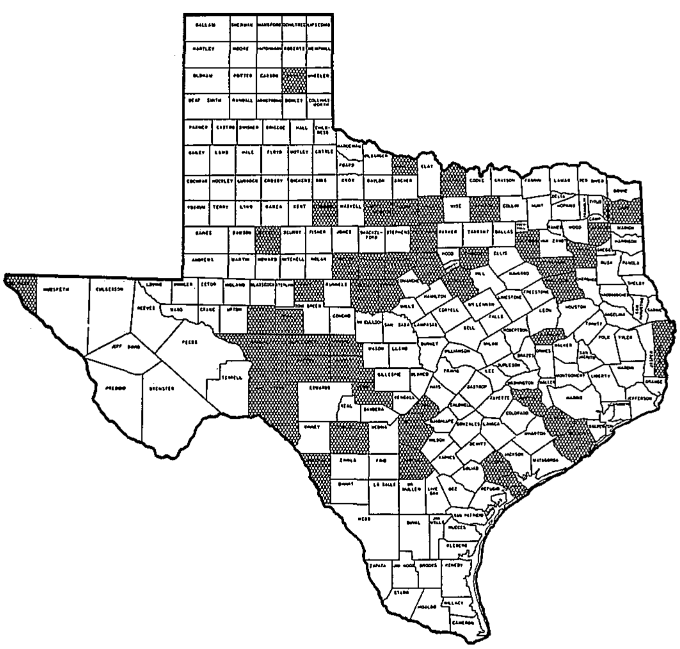


FIGURE 12
Counties in Texas with Confirmed Cases Of Rabies in Domestic Animals, 1981



REYE SYNDROME:

Reye syndrome (RS), or acute encephalopathy with fatty degeneration of the viscera, was first described in Australia in 1963. The syndrome is classically a biphasic condition which begins with an antecedent viral illness (often influenza, an influenza-like illness, or varicella). After five to seven days, there is an acute onset of severe vomiting which is accompanied by a progressive degeneration of mental status; rising serum transaminase, prothrombin time, and serum ammonia levels; fatty metamorphosis of the liver and other organs; and cerebral edema. Dehydration, acidosis, hypotension, bleeding diatheses, and renal insufficiency may also develop. Without rapid and specialized treatment, death or severe neurologic damage can occur as a result of the cerebral edema and increased **intracranial** pressure. Early recognition and hospitalization with intensive supportive care improve the outcome.

Principally a pediatric condition, RS appears to be associated with different age groups depending upon geographic and antecedent illness variables. Reviews of cases from developing nations suggest that RS is a condition of younger children; in the United States, the median age of cases reported in 1973-74 was nine years, and eight years for cases reported in 1977-78. By comparison, the median age of the 36 cases meeting the CDC case definition and reported from Texas in 1981 was three years. In the United States, varicella-associated RS usually occurs in children aged **5-9,** whereas influenza B-associated RS usually occurs in older children, 10-14 years old. Eleven of the 36 Texas cases reportedly included varicella among the antecedent illnesses; the median age was six years, and six cases (54%) were in the 5-9 age group. No 1981 Texas cases reported influenza B as the antecedent illness.

A number of issues regarding RS and its **cause(s)** have not yet been resolved, and these uncertainties are reflected in the case definition currently in use (CDC, 1980):

1) Acute **noninflammatory** encephalopathy with (a) microvesicular fatty metamorphosis of the liver confirmed by biopsy or autopsy, or (b) a serum glutamic **oxaloacetic** transaminase (SGOT), or a serum **glutamic** pyruvic **transaminase** (SGPT), or a serum ammonia **(NH3)** greater than three times normal.
2) **$\leq$8 leukocytes/mm^3** in cerebrospinal fluid, if CSF is obtained.
3) No other more reasonable explanation for the neurologic or hepatic abnormalities.

The reporting of RS is not required in Texas; therefore, surveillance is currently dependent primarily upon infection control nurses in 22 hospitals across the state who have volunteered to participate in a RS surveillance network. Additional reports of RS are received through the weekly morbidity reporting system and/or through mortality data provided by the Bureau of Vital Statistics.

The Bureau of Epidemiology received 44 RS case investigation reports for 1981; 36 of these met the CDC case definition. Of the remaining eight reports, five were based on death certificates which included RS as a cause of death, without laboratory, biopsy, or autopsy confirmation; one report was received with insufficient information; one report varied only slightly from the case definition and may be included as a case later; and in one report without laboratory data, the pathologist who performed the autopsy reported death due to RS, whereas the child's pediatrician did not concur with the diagnosis, citing no change in mental status and laboratory values within normal limits. An additional three death certificates indicating RS as a cause of death were also received; however, no individual case investigation forms were available.

Of the 36 reports meeting the case definition, 17 cases died, 16 recovered without residual neurologic deficits, and three recovered with varying degrees of neurologic residual deficits. The 1981 casefatality ratio in Texas was 47%, in contrast to 28% for 208 cases in the United States with reported outcome (MMWR Vol. 31, No. 5). This higher case-fatality ratio in Texas may be due in part to bias introduced through the surveillance system (i.e. that copies of all death certificates indicating RS are forwarded by the Bureau of Vital Statistics to the Bureau of Epidemiology for follow-up). Table 12 further describes the 36 confirmed cases.

The question of prior use of salicylates (aspirin) in treating the antecedent illness, and subsequent development of RS cannot be addressed with information currently available for 1981 Texas cases. Only six of 36 cases reported had serum salicylate levels obtained, whereas in 18 cases, salicylate levels were not obtained. No information about salicylate usage or serum levels was included for the remaining 12 cases. However, based on casecontrol studies in Arizona, Michigan, and Ohio, and on the opinions of the FDA, NIH Consensus Development Conference, CDC consultants, the CDC, and the American Academy of Pediatrics' Committee on Infectious Diseases, the Surgeon General advises against the use of salicylates and salicylate-containing medications for children with chickenpox or influenza-like illness (MMWR Vol. 31, No. 22, June 11, 1982.)

TABLE 12

REPORTED CASES AND DEATHS DUE TO REYE SYNDROME IN TEXAS BY AGE GROUP, SEX, AND RACE, 1981

	# of Cases	# of Deaths	Case-Fatality Ratio
By Age Group:			
<1	10	5	50%
1-4	11	5	45
5-9	11	5	45
10-14	4	2	50
By Race:			
White	24	12	50%
Hispanic	8	5	63
Black	4	0	—
By Sex:			
Male	16	10	63%
Female	20	7	35
TOTAL ALL CASES	36	17	47%

RICKETTSIAL DISEASES

Endemic Typhus

Endemic (murine or flea-borne) typhus is caused by ***Rickettsia typhi,*** a small obligate intracellular coccobacillus which is usually transmitted by the inoculation of ***R. typhi*** infected feces from a rat flea which defecates on the human host during the feeding process. The itching associated with the flea bite facilitates the inoculation of infected feces into the bite site.

In 1981, Texas reported 49 cases of endemic typhus. While this represents a 20% decrease from the 61 cases reported for Texas in 1980, it is also apparent that many other cases of endemic typhus go undetected or unreported. During the measles outbreak in the Rio Grande Valley last year, it was learned that physicians were seeing many patients with febrile illnesses who had histories of either flea bites or exposure to rats. No further follow-up or laboratory testing was done to determine the exact cause of their illnesses. The 49 cases of endemic typhus reported by Texas in 1981 represent 83.0% of the nation's 59 cases reported (provisionally) in 1981, which is consistent with the high percentages reported by Texas during recent years. (See Table 13.)

TABLE 13

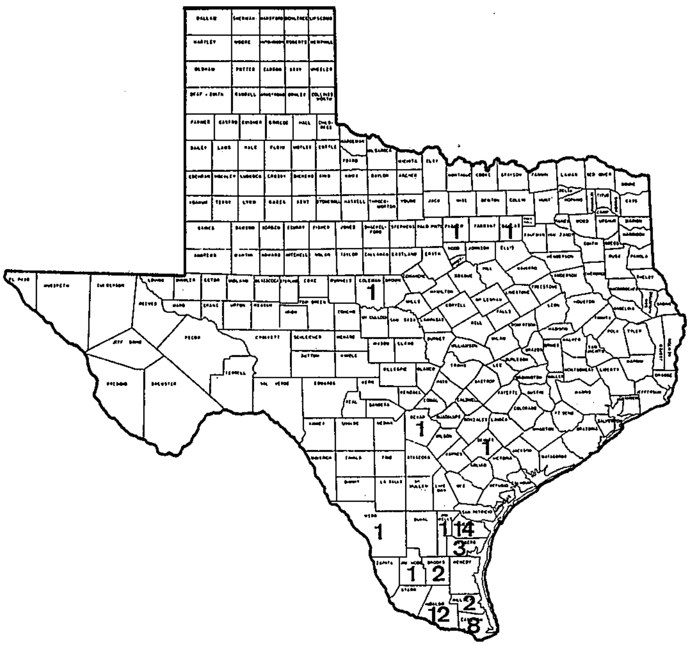
REPORTED CASES OF ENDEMIC TYPHUS IN TEXAS AND THE UNITED STATES, 19751981

YEAR	REPORTED CASES U.S.	TEXAS	TEXAS' % OF U.S. CASES
1975	44	30	68.2%
1976	69	58	84.1
1977	76	55	72.4
1978	46	33	71.7
1979	69	59	85.5
1980	81	61	75.3
1981	59*	49	83.0
TOTAL	444	345	77.7%

*Provisional data

Forty-five of the 49 cases were reported from Public Health Region 8, with Cameron, Hidalgo, and Nueces Counties reporting 34 (68%) of the cases. The remaining four cases were reported from Bexar, Dallas, Parker, and Coleman Counties. (See Figure 13.)

FIGURE 13
Reported Cases Of Endemic Typhus in Texas
By County of Residence, 1981



The ages of the cases ranged from one to 77 years, with cases being uniformly distributed throughout this age span. Cases were almost equally distributed between males and females. Twenty-nine cases were Hispanic, and 20 were white. Cases occurred in all months except January, February, and July; nearly one-third of the cases (14) occurred in June (see Figure 14). The oldest case,-a 77- year-old, white female who had a history of tuberculosis and congestive heart failure, died in a coma as a result of respiratory complications related to these diseases. The remaining 48 cases recovered.

Exposure histories were recorded for 33 cases: Ten (30%) reported a history of flea bites, 7 (21%) reported rodents in their environment, 10 (30%) had contact with dogs, 11 (33%) reported contact with cats, and 15 (45%) reported either a history of flea exposure or rodents in their environment. Two cases mentioned opposums in their environment, and two reported tick exposure.

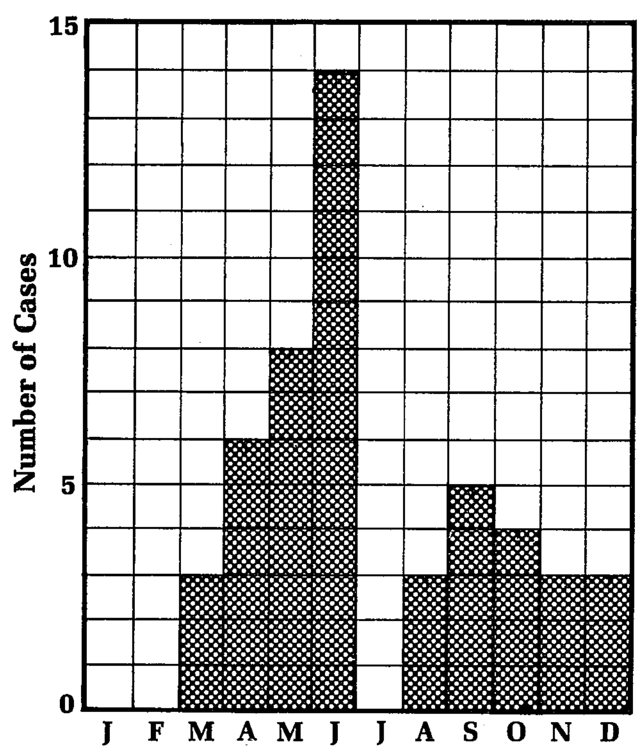
Clinical signs and symptoms were noted with the following frequencies for the 46 cases for whom data are available: fever-100%; rash-63%; headache-65%; malaise-59%; anorexia-59%; nausea and/or vomiting-52%; myalgia-34%; and stupor, delireum, or coma-24%. The associated rash was most frequently observed on the trunk in 21 (72%) of the 29 cases noted to have a rash, followed by the arms (55%) and legs (52%) as the next most commonly reported sites.

Treatment data were recorded for 43 cases: 36 cases were treated with tetracycline alone or in combination with other antibiotics; 3 cases were treated with chloramphenicol alone or in combination with another antibiotic; 2 were treated with antibiotics not generally recognized as being effective against R. *typhi;* 1 was treated with an unspecified antibiotic; and 1 recovered without treatment.

The diagnosis was confirmed serologically for all of the cases. Thirty-two (65%) of the cases were confirmed by the indirect fluorescent antibody (IFA) test, the preferred test for the diagnosis of endemic typhus. Seventeen (35%) of the cases were diagnosed by the OX-19 test, a test which is no longer considered to be of sufficient sensitivity or specificity to allow the accurate diagnosis of endemic typhus.

An additional case of endemic typhus was reported, based on direct FA testing of a skin biopsy specimen which was initially interpreted as being positive. This result was later determined to be a biological false positive after the case had been entered into the TDH statistical report as a confirmed case of endemic typhus.

FIGURE 14
Reported Cases of Endemic Typhus
In Texas
By Month of Onset, 1981



Rocky Mountain Spotted Fever

Rocky Mountain spotted fever (RMSF) is a rickettsial infection caused by Rickettsia *rickettsii.* The organism is primarily a parasite of ticks and is passed through unending generations of ticks by transovarial transmission. Man contracts RMSF either through the bite of an infected tick or by contamination of **skin** with crushed tissues or feces of infected ticks. In Texas, the tick species most commonly associated with human infection are the lone star tick (Amblyomma americanum), the dog tick (Dermacentor variabilis), and the brown dog tick (*Rhipicephalus* sanguineus).

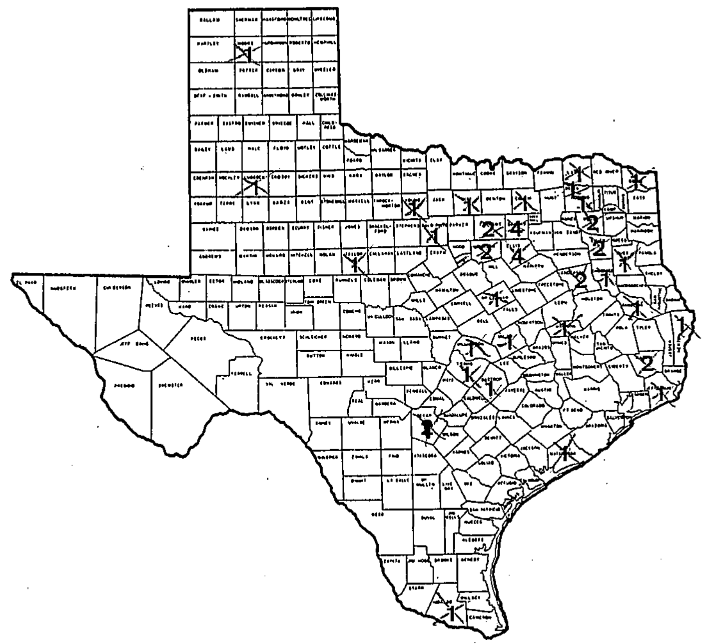
Symptoms of RMSF include headache, fever, and myalgia, followed in two to three days by a maculopapular rash on the wrists and **ankles.** The rash then progresses to involve the rest of the body, often becoming petechial or **purpuric.** Not **all** cases manifest a rash; eleven of the 45 cases reported in 1981 did not develop a rash.

Cases of RMSF reported in Texas during 1981 continued to occur primarily in Public Health Regions **5, 6,** 7, and 10. Of the 45 cases reported in **1981, 37** (or 82%) resided in these Public Health Regions which include the central, northeastern, and eastern counties of Texas. The counties of residence of the cases are presented in Figure 15. Incidence rates of 2.0 cases **and 0.75** cases per 100,000 population seen in Public Health Regions 7 and 10, respectively, compare to an incidence rate of **0.32** per 100,000 population for the state as a whole.

The 45 cases of RMSF reported in 1981 represent a 45% increase over the 31 cases reported in 1980 and was the largest number ever reported in Texas. There were two deaths due to the disease in 1981; a 64-year-old, Smith County male died in May, and a 61-year-old, Johnson County male died in August as a result of RMSF.

Table 14 presents the distribution of cases by age and sex. Twenty-eight cases were males, and 17 were females. The median age of the cases was 20 years.

FIGURE 15
Reported Cases of Rocky Mountain Spotted Fever In Texas By County of Residence, 1981



The majority of cases had onset of symptoms between the months of April and **August.** Two cases had onset of symptoms in February, and one case reported onset of symptoms in November.

Twenty-four cases reported a history of tick attachment or removing ticks by hand from pets. Twenty-eight cases had a pet dog or cat which had ticks.

STREPTOCOCCAL DISEASES

Group **A** (beta hemolytic) streptococci cause a variety of diseases. The two most common diseases are streptococcal pharyngitis (**strep** throat) and streptococcal **skin** infection (impetigo or pyoderma). Less common streptococcal diseases include scarlet fever (SF), erysipelas, wound infection, cellulitis, otitis media, mastoiditis,

TABLE **14**

REPORTED CASES OF ROCKY MOUNTAIN SPOTTED FEVER IN TEXAS BY SEX AND AGE GROUP, 1981

AGE GROUP IN YEARS

SEX	<5	5-9	10-19	20-29	30-39	40-59	60+	TOTAL
MALE	4	4	8	2	1	2	7	28
FEMALE	2	1	3	5	1	4	1	17
	6	5	11	7	2	6	8	45

pneumonia, septicemia, meningitis, brain abscess, septic arthritis, osteomyelitis, and endocarditis. The delayed complications to impetigo **and/or** streptococcal pharyngitis include acute (poststreptococcal) glomerulonephritis (AGN) and acute rheumatic fever (ARF).

Strep Throat and Scarlet Fever:

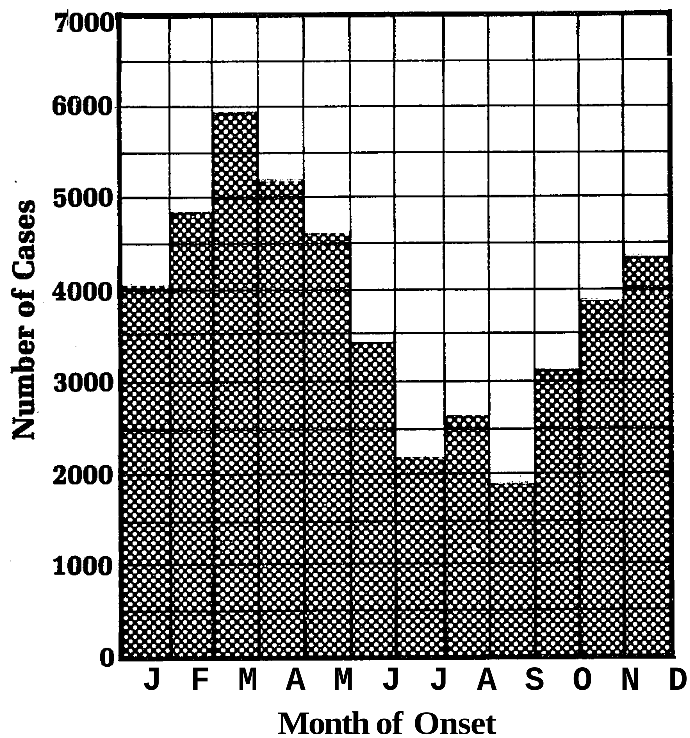
Strep throat is among the most common bacterial infections of childhood. In older children and adults, the illness is characterized by an incubation period of two to four days followed by the rather abrupt onset of sore throat, fever, headache, malaise, nausea, and vomiting. Physical findings include inflammation of the posterior pharynx, grayish-white exudates of the pharynx or tonsils, and enlarged and tender anterior cervical lymph nodes. The disease is ordinarily spread through contact with saliva or nasal secretions of an infected person, but explosive foodborne outbreaks are well documented following ingestion of contaminated **milk** or egg products. **Strep** throat is generally a self-limiting illness characterized by complete recovery in seven to ten days, but on occasion, it may be followed in one to five weeks by ARF or AGN.

Scarlet fever (scarlatina) is a clinical syndrome which results from infection with a strain of group A streptococcus which elaborates any one of at least three **immunologically** distinct erythrogenic toxins. The syndrome occurs in only a minority of streptococcal infections, and the most common site for these infections is in the pharynx. Occasionally SF will result from puerperal sepsis or burn, wound, or other **skin** infections.

Scarlet fever is characterized by an abrupt onset of fever, sore throat, malaise, headache, nausea, and vomiting. The rash develops within one to two days and consists of a diffuse flush or erythema with superimposed elevated red punctate lesions. Other characteristic signs of SF include **circumoral** pallor, Pastia's lines in **skin** folds, and a **"strawberry"** tongue. The fever usually resolves in three to five days, but it may be weeks before the patient feels completely well. During convalescence, varying degrees of **desquamation** are often seen. On the trunk and limbs, small flakes of **skin** are shed ("branny" desquamation), whereas on the hands and feet, thick sheets or casts of epidermis may be lost leaving pink intact **skin** underneath. Scarlet fever may be followed by the same sequelae as **strep** throat (**i.e.,** ARF or AGN).

There were 46,072 cases of streptococcal sore throat **and/or** scarlet fever reported to the Texas Department of Health in 1981. This represents the second largest number of cases since the reporting of streptococcal sore throat began in 1952. (Scarlet fever has been reported in Texas since 1920.) Previous peak years occurred in 1959 (46,030 cases) and in 1972 (50,274 cases). The average annual number of cases from 1952 to 1981 is 36,230 cases. The distribution of cases by month in 1981 showed the customary seasonal variation with a maximum of 5,918 cases reported in March and a minimum of 1,957 cases reported in September (see Figure 16).

FIGURE 16
Reported Cases of Streptococcal Sore Throat Including Scarlet Fever By Month of Report, Texas, 1981



For counties with populations over 200,000, attack rates varied from a high of 9.39 cases per 1,000 population (in Cameron County) to a low of 0.32 cases per 1,000 population (in Harris County). The highest attack rate for the state was in **Concho** County (population 2,933) where there were 466.4 cases reported per 1,000 population. Some of the wide variations in rates is no doubt due to a difference in reporting practices in the various counties. (See Table 15.)

Rheumatic Fever:

Acute rheumatic fever (ARF) is generally a disease of late childhood or adolescence and is characterized by inflammatory processes involving the joints, heart, subcutaneous tissues, and central nervous system. Initial clinical manifestations usually include fever and painful swelling of one or more joints such as the knees, elbows, ankles, or wrists. The pain seems to move from joint to joint. Approximately 40-50% of children with ARF will show signs of **carditis** with heart **murmur(s)** not

TABLE 15

STREP THROAT AND SCARLET FEVER RATES FOR COUNTIES WITH POPULATIONS OVER 200,000, 1981.

COUNTY	POPULATION 1981	REPORTED CASES	RATE PER 1000 POPULATION
Bexar	1,020,174	5,159	5.057
Cameron	220,024	2,065	9.385
Dallas	1,594,233	4,116	2.582
El Paso	498,327	223	.447
Harris	2,499,293	807	.323
Hidalgo	298,240	1,805	6.052
Jefferson	254,542	1,373	5.394
Lubbock	216,778	1,511	6.970
Nueces	275,182	1,635	5.942
Tarrant	883,671	458	.518
Travis	435,412	1,510	3.468
All Others	6,483,704	25,410	3.919
Total	14,679,580	46,072	3.139

previously present, cardiac enlargement, congestive heart failure, or pericardial friction rubs. Non-tender subcutaneous nodules near elbows, knees, wrists, or ankles may occur several weeks after onset. A non-pruritic, nonpainful erythematous rash (erythema marginatum) is occasionally seen on the trunk or proximal extremities. In a minority of cases, the patient experiences involuntary spasmodic incoordinated movements of the face, head, or extremities (Sydenham's chorea). Repeated attacks of ARF can lead to progressively worse cardiac damage, producing rheumatic heart disease.

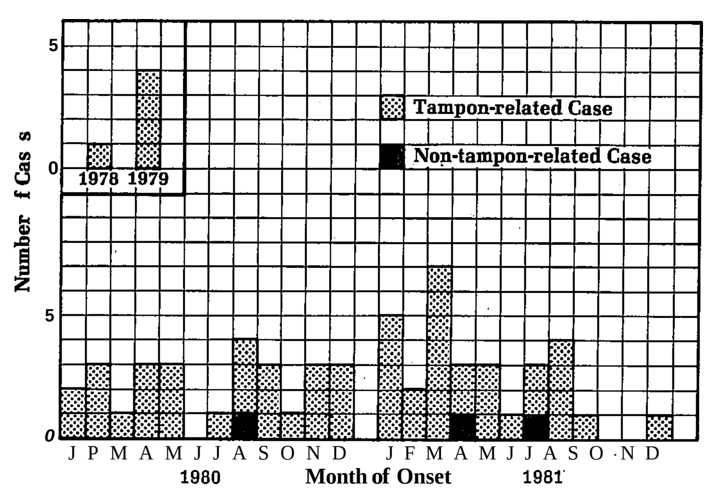
Although it is known that ARF is a sequela of streptococcal throat infections, the exact mechanisms by which disease is produced are largely speculative. For reasons unknown, the incidence of ARF following strep throat infections continues to decline both in the U.S. and around the world.

There were 18 cases of rheumatic fever reported to the Texas Department of Health in 1981. Although this is a slight increase over the number of cases in 1980, it is still consistent with the general downward trend from a high of 87 cases reported in 1965. The cases were clustered primarily during the winter and spring months, with all but four cases being reported during the first six months of the year. There was no apparent geographic clustering. The cases ranged from 4 to 25 years of age with a mean age of 10.7 years. Six cases were male, and twelve were female.

TOXIC-SHOCK SYNDROME

In 1981, 30 Texas women were reported to have toxic-shock syndrome (TSS), a slight increase over the 27 cases reported in 1980. All but two (93%) of the Texas cases were using tampons when they became ill. The brands being used included Playtex®, Tampax®, OB®, and Kotex®. Of these 28 women, 26 had vaginal cultures positive for *S. aureus*. The two cases in 1981 not related to tampon use included an 11-year-old with cellulitis and a 12-year-old with an axillary abscess from which *S. aureus* was isolated. Menstrually associated cases have been strongly associated with the presence of *Staphylococcus aureus* in the vagina, whereas nonmenstrually associated cases have been associated with focal staphylococcal infections at a variety of sites, including abscesses, surgical wounds, burns, etc. Figure 17 provides comparative data for 1980 and 1981 of tampon-related cases.

FIGURE 17
Reported Cases of Toxic Shock Syndrome in Texas 1978 - 1981



Ages of the 1981 TSS cases ranged from 11 to 33 years with a mean age of 22 years. With the exception of one Hispanic, all of the women were white. Organ systems involved were: gastrointestinal (97%); mucous membrane (97%); muscular (80%); renal (63%); central nervous system (27%); hepatic (23%); and hematologic (23%). Besides the involvement of three or more of the above systems, the cases also had fever (>102°F), hypotension (systolic blood pressure <90mm Hg), a rash, and desquamation. An 18-year-old and a 29-year-old died from TSS in 1981; the case-fatality ratio was 7%.

TRICHINOSIS

Trichinosis is a helminthic disease caused by the organism, ***Trichinella spiralis,*** which can infect the skeletal muscle of many carnivorous animals, such as swine, rats, wolves, and bears. The disease is caused by the ingestion of raw or inadequately cooked meats, especially pork, which contain encysted ***T. spiralis*** larvae. A Texas law designed to prevent the transmission of trichinosis requires that a permit be obtained prior to feeding garbage to swine and that the garbage be heated to a certain temperature for a prescribed length of time in order to kill any potential ***T. spiralis.*** Also, individuals should cook pork until all parts of the meat reach at least 150°F and have turned from pink to grey.

Only two cases of trichinosis were reported in Texas in 1981 compared to six cases in 1980 and four cases in 1979. The first case occurred in January when a 57-year-old male from Navarro County was hospitalized with a possible bowel obstruction and found to have eosinophilia. He admitted that for most of his life he had eaten raw meat, including sausage, roast, ham, and bacon. After his hospitalization for trichinosis, he discontinued this practice.

A 25-year-old, white female from Sherman County developed fever up to 104°F, severe muscular aches, and eosinophilia. A muscle biopsy of her leg revealed *T. spiralis* cysts. Twenty-four days before her illness began, she had eaten meat from a pig which was slaughtered to feed a large group of people. The animal had been primarily fed corn and maize but had also been fed table scraps and could have eaten rats which were known to live near its pen. This case occurred in October 1981.

TUBERCULOSIS

Contrary to expectations, the number of newly reported cases of tuberculosis (2,015) and the incidence of the disease per 100,000 population (13.7) declined in 1981 as compared to the previous year by 2.9% and 6.1%, respectively. This represents a continuation of a long-term trend, as may be seen in Figure 18. There were several reasons for a pessimistic prediction at the start of the year:

(1) The population of the state was growing at an average annual rate of 3.1% in the period 1977-1981.
(2) Refugees from Southeast Asia, in whom the incidence rate was approximately 65 times that in the Texas population, were arriving in the state at approximately 800 individuals per month.
(3) The downward trend in the percentage of infected (but not diseased) contacts to infectious tuberculosis cases who completed an adequate course of preventive drug therapy was continuing. (Failure to complete the course increases the risk of developing tuberculosis, particularly in the first year after infection.)

While the reasons for the continued and gratifying decline are not fully understood, credit must be given to the availability of excellent resources to maintain the control program and to consciencious management of patients in offices and clinics throughout the state. Confirmation of this is seen in Table 16 which illustrates the prevalence ratio of recurrent (inadequately treated) tuberculosis in the ten states reporting 1,000 or more

TABLE 16

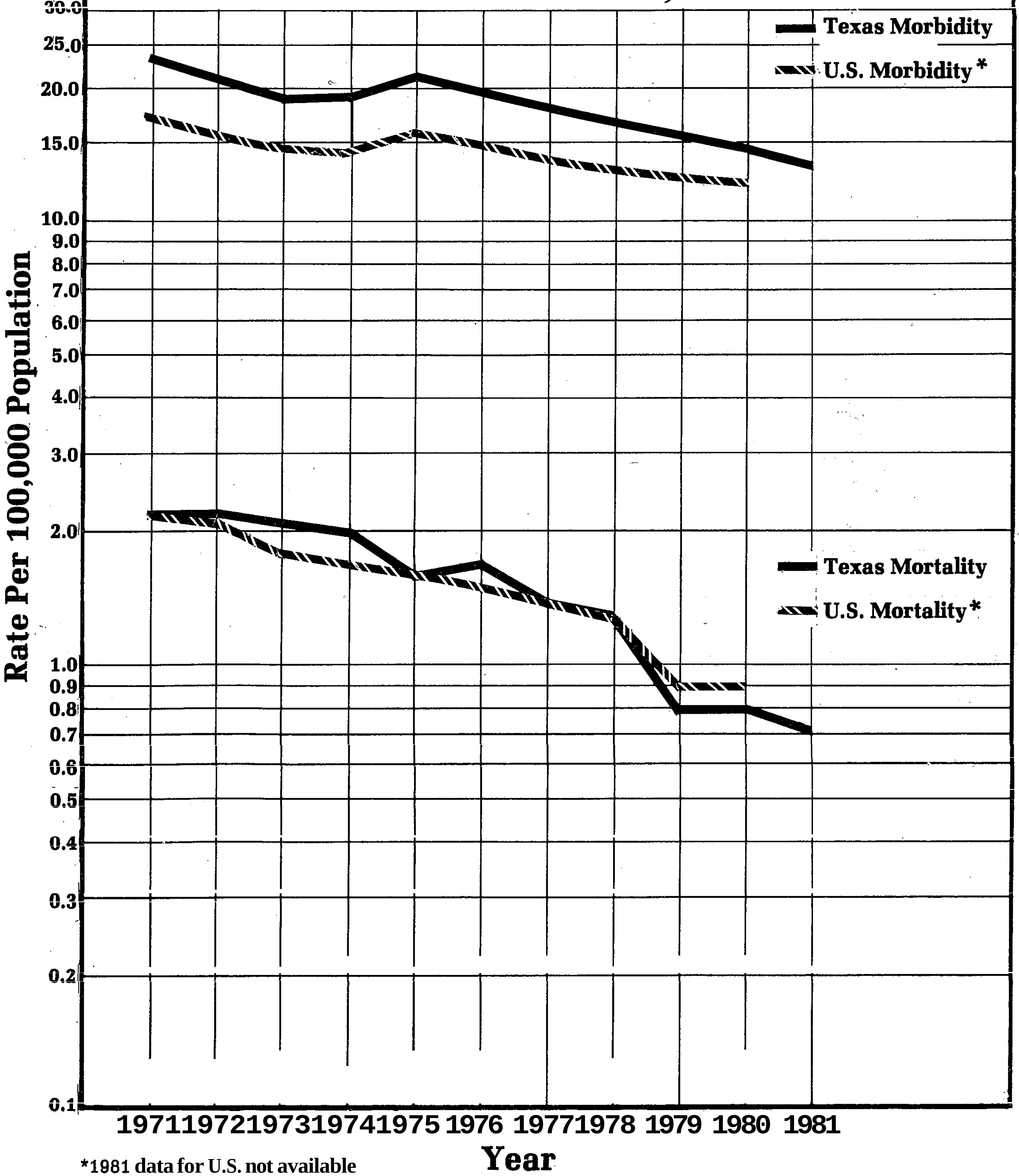
REPORTED CASES OF RECURRENT TUBERCULOSIS SELECTED STATES AND NATIONWIDE, 1980

	TOTAL NUMBER OF TB CASES	PERCENT RECURRENCE
U.S.	27,749	**7.2***
California	4,279	not available
North Carolina	1,066	11.4
Illinois	1,352	10.7
New York	2,294	9.0
Pennsylvania	1,015	8.0
Florida	1,647	7.5
Michigan	1,168	7.4
Texas	2,075	4.5

*Based on 20,829 cases from states reporting recurrence.

FIGURE 18

Tuberculosis Morbidity and Mortality Per 100,000 Population Texas and the United States, 1971 - 1981



*1981 data for U.S. not available

TABLE 17

REPORTED CASES OF TUBERCULOSIS BY RACE, SEX, AND HISPANIC ETHNICITY TEXAS, 1981

AGE GROUP	MALE	FEMALE	WHITE*	BLACK	AMER. INDIAN/ ALASKAN NATIVE	ASIAN/PACIFIC ISLANDER	HISPANIC ONLY
0-4	43	43	62	18	0	6	46
5-14	36	28	39	7	1	17	35
15-24	110	87	128	33	1	35	104
25-34	207	139	202	92	1	51	136
35-44	211	87	185	75	2	36	91
45-54	237	67	214	75	0	15	95
55-64	209	80	217	63	1	8	91
65+	295	136	323	90	4	14	136
TOTAL	1,348	667	1,370	453	10	182	734

*including Hispanic

cases of tuberculosis in 1980; Texas ranks lowest among these and well below the national average of all states. In 1981, the percentage of all reported cases that were recurrent disease fell to 3.2%; comparable data from other states were not yet available.

A matter of concern in Texas as well as at the national level is the occurrence of tuberculosis in young children (under five years of age). Each such case represents a double failure: a failure to interrupt transmission of infection from a case of tuberculosis and a failure to prevent, through drug prophylaxis, the emergence of disease in such an infected child. In 1981, the incidence of new tuberculosis among children in this age group remained at approximately six cases per 100,000 population. There was substantial variation among the major racial and ethnic subpopulations of these children with the approximate rates for non-Hispanic whites, blacks, and Hispanics being 3, 9, and 11 cases per 100,000, respectively. Distribution of cases by age group, sex, and racelethnic group is provided in Table 17.

The death rate from tuberculosis declined from 0.9 to **0.8/100,000.** The sharp drop between 1978 and 1979 seen in Figure 18 is due to a change in coding procedures for attributing primary cause of death.

TULAREMIA

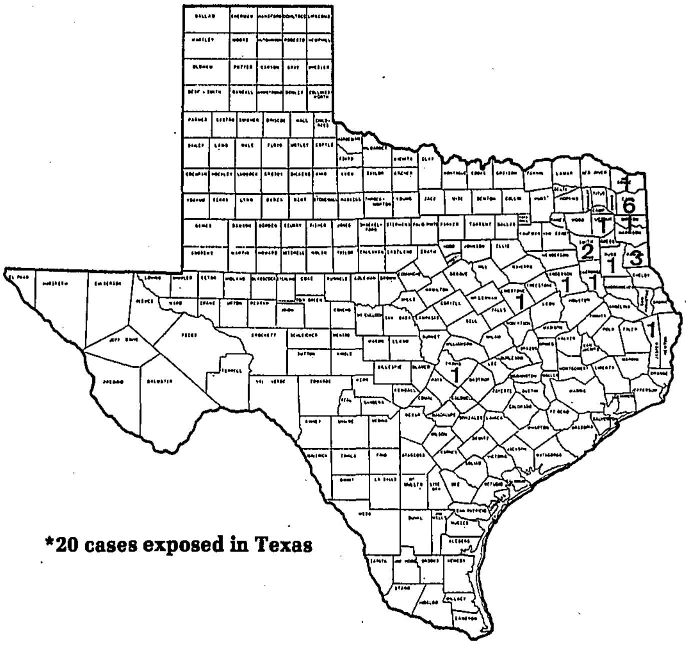
Tularemia is a **zoonosis** produced by a small, **gram-negative coccobacillus,** ***Francisella tularensis.*** This organism is distributed throughout the Northern Hemisphere and has been recovered from 100 species of wild animals, at least nine species of domestic animals, and several **blood-sucking** arthropods. Man usually acquires the infection through skinning or handling infected animals (often rabbits) or through bites of infected arthropods (usually ticks). Other sources of transmission include animal bites, inhalation of infectious aerosols, drinking contaminated water, or eating inadequately cooked meat from an infected animal. As few as ten organisms may produce infection if they are inhaled or enter a break in the **skin,** whereas at least 10^8 organisms must be ingested to produce illness.

After an incubation period of three to five days (range 1 to 14 days), a skin papule usually develops at the site of entry, followed two to four days later by an **eschar-forming** ulceration accompanied by fever and lymphadenopathy. This type of tularemia is the **ulceroglandular** form and accounts for 75-85% of **all** cases. Other types include glandular (5-lo%), with lymphadenopathy and fever, but no skin ulcer; typhoidal **(5-15%),** with fever and often pneumonia, but without lymphadenopathy; and rarely oculoglandular or oropharyngeal tularemia.

The diagnosis is almost always made serologically by a four-fold rise in tularemia agglutination titers. ***F. tularensis*** is rarely seen in gram stains of infected material and does not grow on most ordinary media. In addition, most laboratories are reluctant to culture ***F. tularensis*** because of the risk of aerosol transmission to laboratory personnel.

The 23 cases of tularemia reported by the Texas Department of Health in 1981 included one case in a 64-year-old, white male resident of Gregg County with an onset of tick-bite associated ulceroglandular tularemia in October 1980. (The delayed arrival of this report did not permit its inclusion in the 1980 morbidity data.) The 22 cases with onset of illness in 1981 represent a 69% increase over the 1980 total of 13 cases (actual total).

FIGURE 19
Reported Cases of Tularemia in Texas*
By County of Exposure, 1981



Eleven counties in northeast Texas were the sites of exposure for 19 cases (see Figure 19); two cases reported exposure in other states (Oklahoma and New Mexico/Colorado), and one case reported exposure in Travis County. Fourteen cases were the ulceroglandular form, five were glandular, and three were the typhoidal type with associated pneumonitis. All cases recovered. The 23 cases reported in 1981 included 16 males and 7 females, and ranged in age from 19 months to 68 years with a fairly even distribution of cases in all age groups.

Cases reported onset in all months except February and November, with two peak months of four cases each during May and September. The sources of exposure reported were as follows: tick bites-10, skinning animals-5 (rabbits-3, squirrels-1, cattle-1), other unspecified insect bites-2, cat exposures-2, handling a dead raccoon-1, breaks in skin with no other exposure-2, and no apparent source-1. In general, cases with onsets during the summer months, May through August, were associated with tick or insect bites, eight of nine cases; whereas cases with onsets during non-summer months were associated with animal and other types of exposure. All nine tick bite associated cases occurred during the months of April through August, and all were of the ulceroglandular form. Two of the three typhoidal cases were associated with skinning animals while the third handled a dead raccoon. Aerosol inoculation may have occurred since all developed an associated pneumonitis. One case reported drinking untreated water in addition to being exposed to a sick cat. Recent reports of tularemia associated with domestic cats suggest that this patient's exposure to the sick cat was a more likely source of infection than drinking the untreated water.

TYPHOID FEVER

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

One hundred twenty-seven (127) cases of typhoid fever were reported in Texas in 1981, a 90% increase over the number reported (67) in 1980. The county of residence of these cases is shown in Figure 20. Sixteen cases (or 13%) were classified as imported cases. That is, the cases had been exposed outside of the United States. Sixty-eight cases (or 54%) occurred in males and 59 cases (or 46%) in females. The distribution of cases by race/ethnicity included 22 cases (17%) classified as white, 98 cases (77%) as Hispanic, 3 cases (2%) as black, and 4 cases (3%) as Asian.

Of the 111 cases that acquired the disease in the United States, 80 cases were epidemiologically linked to exposure to a Mexican food takeout restaurant in Bexar County. Barbacoa, the meat from steamed bovine heads, was identified as the source of ***S. typhi.*** ***S. typhi*** was cultured from the stool of one of 31 restaurant employees. This outbreak began in August and continued through October and represented the largest restaurant-associated typhoid fever outbreak reported in the United States in over 50 years.

FIGURE 20
Reported Cases of Typhoid Fever in Texas
By County of Residence, 1981

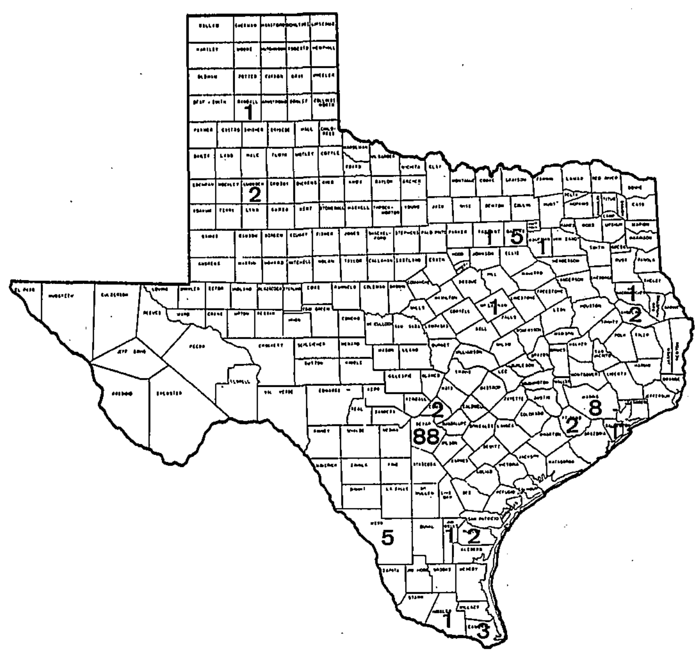


TABLE 18

REDUCTIONS IN MORBIDITY AND MORTALITY FOR FIVE VACCINEPREVENTABLE DISEASES IN TEXAS BY DISEASE, PERIOD, AND PERCENT CHANGE 1952-66 and 1967-81 COMPARED

DISEASE	MORBIDITY 1952-66	MORBIDITY 1967-81	MORBIDITY % CHANGE	MORTALITY 1952-66	MORTALITY 1967-81	MORTALITY % CHANGE
Diphtheria	2,297	648	–72%	176	50	–72%
Measles	736,679	49,305	–93	594	68	–89
Pertussis	62,348	3,804	–94	378	23	–94
Polio	7,042	73	–99	722	19	–97
Tetanus	>733*	235	–68	733	138	–81
	809,099	54,065	–93%	2,603	298	–89%

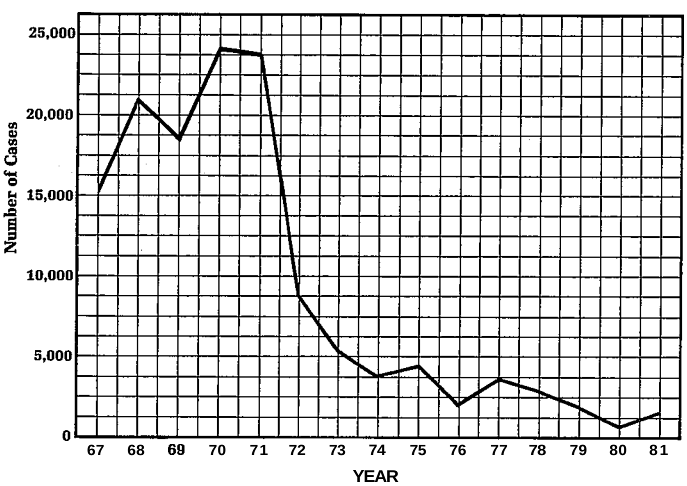
*Official figure is 544, but actual figure is greater than 733 because not all tetanus deaths were reported as cases until 1967.

NOTE: Rubella and mumps are not included in the above table since these diseases were not reported in Texas until 1966 and 1968, **respectively.**

VACCINE-PREVENTABLE DISEASES

Remarkable accomplishments have been made in the reduction of vaccine-preventable disease morbidity and mortality during the past 15 years. There was a 93% reduction in morbidity and an 89% reduction in mortality when two recent 15-year periods are compared as shown in Table 18. The decreases in annual morbidity for seven vaccine-preventable diseases during the latest 15-year period (1967-1981) are illustrated in Figure 21.

FIGURE 21
Reported Morbidity For Seven Vaccine-Preventable Diseases 1967 - 1981, Texas



Factors contributing to disease reduction during this period include the establishment of the Texas Department of Health's Immunization Division and public health regions; child-care facility and school immunization laws enacted and implemented in 1971; provision of new vaccines in public clinics (measles vaccine distribution began in 1967, **rubella in** 1969, and mumps in 1972); and, adequate supplies of DTP, Td, and polio vaccines for public clinic use.

In 1981, and for the fourth consecutive year, there were no cases of paralytic poliomyelitis reported in Texas. In **fact,** Texas has been polio-free for seven out ***of*** the last ten years. Likewise, there were no cases of diphtheria reported in Texas last year. In spite of these accomplishments, there was an unexpected increase in **immunizable** disease morbidity in Texas in 1981 (a 118% increase over the total number of cases reported in 1980). The increase was the result of several outbreaks of measles.

Measles

Measles **(rubeola)** is often a severe disease, frequently complicated by middle ear infection or bronchopneumonia and sometimes encephalitis. One child in every 10,000 who contracts measles dies, predominately from respiratory and neurologic causes. The risks of encephalitis and death are known to be greater in infants, and suspected to be greater in adults, than in children and adolescents. Measles complicated by encephalitis and pneumonia caused the death of a 13-month-old child in Texas in March 1981. This child was too young to have received the routine measles immunization at age 15 months.

The 851 cases of measles reported in Texas in 1981 represent a four-fold increase from the 181 cases reported in 1980. This increase resulted from measles outbreaks which occurred among both preschool- and school-age children in several widely separated areas in Texas, primarily the Rio Grande Valley, El Paso County, Bexar County; and Harris County. The outbreaks were controlled through additional immunization clinics and applied epidemiology. Table 19 provides the age distribution of 1981 measles cases in Texas.

In order to reduce the threat of future outbreaks, the Texas Board of Health moved quickly in 1981 to accelerate measles vaccine requirements in schools, effective **9/1/81,** so that all students are now required to have measles vaccine, and booster doses are required for students immunized before 1968.

Mumps

In 1981, 227 cases of mumps were reported to the Texas Department of Health, a 7% increase over the 212 cases. 'reported in 1980. Age. was not reported for 4.4% of the cases, whereas 44.5% were reported in children under ten years of age and 35.2% were in the 10-19 year group. Only 15.4% of cases occurred among persons 20 years of age or older. The ethnic distribution of 1981 cases included: 109 whites (48.0%), 83 Hispanics (36.6%), 16 blacks (7.0%), 2 Asians (0.9%), and racelethnicity was not reported for the remaining 17 cases (7.5%).

Mumps is generally a self-limited disease, but it may be moderately debilitating. Benign meningeal signs appear in up to 15% of cases, but permanent sequelae are rare. Nerve deafness is one of the most serious of the rare complications involving the central nervous system. Orchitis (usually unilateral) has been reported as a complication in up to 20% of clinical mumps cases in postpubertal males, although sterility is very rare. Symptomatic involvement of other glands and organs has been observed less frequently.

The highest incidence in 1981 was among Hispanics in which 59.2% of the cases were reported. Morbidity among whites accounted for 26.8% of cases, whereas 5.1% were black, .1% were Asian, and racelethnicity was not indicated for 8.8% of the cases.

Rubella

A total of 176 cases of rubella was reported in Texas during 1981, a 34% increase over the previous year. Nevertheless, 1981 rubella morbidity represented the second lowest year of incidence since vaccine was introduced in 1969.

TABLE 19

REPORTED CASES OF MEASLES IN TEXAS By AGE GROUP, 1981

AGE GROUP	# OF CASES	% OF CASES	CUMULATIVE%
<1 Year	212	24.9%	24.9%
1-4 Yrs	259	30.4	55.3
5-9 Yrs	126	14.8	70.1
10-14 Yrs	93	10.9	80.0
15-19 Yrs	107	12.6	93.6
20+ Yrs	44	5.2	98.8
Unknown	10	1.2	100.0
TOTAL	851	100.0%	

The following distribution of cases by age group was observed in 1981: 0-4 years, 62%; 5-9 years, 15%; 10-14 years, 10%; 15-19 years, 3%; and, 20+ years, 8%; and age was not reported for 2% of the cases. (Actual numbers of cases in individual age groups are presented in Table V, Appendix.)

Rubella is a common childhood rash disease that is often overlooked or misdiagnosed. The most common signs and symptoms—postauricular and suboccipital lymphadenopathy, arthralgia, and transient erythematous rash with low fever—may not be recognized as rubella. Subclinical infections occur frequently.

By far, the most important consequences of rubella are the fetal deaths and anomalies that frequently result from rubella infection in early pregnancy, especially in the first trimester. Preventing infection of the fetus and consequently congenital rubella syndrome is a major objective of rubella immunization programs. Only one case of congenital rubella syndrome was reported in Texas in 1981.

The continuing occurrence of rubella among women of childbearing age and the increasing evidence of little or no teratogenicity from the vaccine strongly indicate that increased emphasis should be placed on vaccinating susceptible adolescent and adult females of childbearing age. However, because of the theoretical risk to the fetus, females of childbearing age should receive vaccine only if they say they are not pregnant and are counseled not to become pregnant for three months after vaccination. In view of the importance of protecting this age group against rubella, reasonable precautions in a rubella immunization program include asking females if they are pregnant, excluding those who say they are, and explaining the theoretical risks to the others.

Pertussis

During 1981, a total of 91 cases of pertussis was reported in Texas, an 11% increase over the 82 cases reported in 1980. The number of reported cases has changed relatively little during the last 10 years in Texas, with an annual average of 106 cases and less than one death per average year. However, the efficacy of vaccine and its generalized use, since minimum pertussis vaccine requirements were set by the **Bureau** of Biologics in 1949 and modified in 1953, have resulted in remarkable reductions in pertussis morbidity and mortality over the past four decades. During the period 1920-1948 in Texas, an annual average of 5,986 pertussis cases was reported. Pertussis mortality for the period 1933-1948 averaged 232 per year.

Complications of pertussis include pneumonia, otitis media, atelectasis, emphysema, bronchiectasis, convulsions, hypoglycemia, and brain damage. Death occurs in one percent or less of infections. Subclinical infection is not thought to be common, and prolonged carriage has not been described. The disease is most severe in young infants; 70 percent of all deaths occur during the first year of life.

The disease is spread by respiratory contact and is highly communicable, with secondary attack rates in families as high as 90 percent. Because the incidence and severity of pertussis decrease with age, and because the vaccine may cause side effects and adverse reactions, routine pertussis immunization is neither needed nor recommended for persons seven years old or older, except under unusual circumstances **(e.g.,** pertussis vaccine may be recommended for a patient with chronic pulmonary disease who has been exposed to a child with pertussis).

Tetanus

In 1981, eight tetanus cases, 38% fewer than in 1980, were reported in Texas. Cases were located throughout the state; two cases occurred in Harris County, and Bexar, Collin, El **Paso,** Hidalgo, Van Zandt, and Wichita Counties each reported one case.

Though tetanus vaccines have been fairly widely used for **the last** 35 years, **six (75%)** of the eight cases reported in 1981 **had never** received a tetanus immunization. Vaccination status of the other two cases (25%) **was** unknown.

Tetanus cases in Texas usually occur in adults over 50 years of age who have never been immunized and in infants under 28 days old who develop tetanus due to infections of the unhealed umbilical cord. *All* but two of the 1981 cases fell into these two categories. Five cases (63%) were in adults 61-81 years of age, and one (13%) case occurred in a six-day-old infant from Hidalgo County who had been delivered at home by a lay midwife. The other two cases (25%) occurred in a two-year-old whose vaccination status was unclear and in a fiveyear-old who had never been vaccinated. Both children had puncture wounds of the feet from stepping on wooden splinters. Other situations which led to tetanus included a diabetic who trimmed a corn on his toe, a crushed finger, a nail puncture wound, and a leg ulceration.

The majority **(75%,** or six cases) of the 1981 tetanus cases was white, and 25% (2) were Hispanic. Cases were not evenly distributed, as they were in 1980, according to sex. In 1981, six (75%) cases were female, and two (25%) were male. The case fatality ratio was **38%,** and fatalities included cases who were **61, 63,** and 73 years of **age**

VENEREAL DISEASES

In **1981, 91,059** cases of venereal disease were reported to the Infectious Disease **Control Division** of the Texas Department of Health. This represents an increase of 4% over the previous year and reflects only the number of cases reported in the civilian population.

Gonorrhea

The number of cases of gonorrhea reported in Texas increased from 80,297 in 1980 to 81,822 in 1981. However, the incidence rate, 557.4 cases per 100,000 population, declined for the third consecutive year, though at a much slower rate than between 1980 and 1981. An additional 2,859 cases were reported in military personnel stationed in Texas in **1981. The** continued decline in the case rate is related to extensive screening, patient interviewing, and treatment programs for gonorrhea infections in Texas. For example, over 470,000 women in the childbearing age groups were screened for gonorrhea in 1981. Of those tested, nearly 30,000 were identified as infected with gonorrhea. These women were treated and followed-up through this program.

The incidence of gonorrhea has generally been highest in the sexually active age groups, with a peak among 20-24 year-olds of both sexes. The rate for gonorrhea reported among males was 730.4 per 100,000 compared to a case rate of 391.6 among females. Gonorrhea was also reported more often in blacks than in whites.

Pelvic inflammatory disease (PID) is a major complication of untreated gonorrhea in women. Since 1978, the Division has undertaken a program directed toward the identification of women with these complications. Gonococcal pelvic inflammatory disease **(G/PID)** results in significant medical problems. It is **linked** with recurrent pelvic infections, ectopic pregnancy, and sterility. The economic costs associated with these conditions are high. The purpose of the GIPID initiative was to identify women who were being diagnosed with GIPID and to assist with the medical management and follow-up of the patient and her sexual partners. In **1981, 2,293** cases of GIPID were reported in Texas. This was a 15% increase in the reported cases over the previous year. Of the number of cases of gonorrhea among women, one in thirteen was reported with GIPID. Women in the 15-24 year age group accounted for 72% of the total reported GIPID in Texas in 1981.

In 1976, the first case of **penicillinase** producing ***Neisseria gonorrhoeae*** (PPNG) was reported in Texas. This strain of gonorrhea, **which is** resistant to treatment with penicillin, was identified only sporadically through 1980. During that time, only 29 cases were identified and reported to the Texas Department of Health. However, during 1981, there were 102 cases reported. Cases of PPNG were reported from nine of the twelve Public Health Regions across the state. These increases in case identification and reporting paralleled increases that were occurring nationwide. Increased surveillance, routine testing for penicillin resistance in many of the affiliated laboratories statewide, and intensified case investigations have been responsible for the identification of some of these cases.

Syphilis

By every measure, syphilis was more prevalent in Texas in 1981 than in the previous year. The overall incidence rate of 62.8 cases per 100,000 population was 26% greater than the 1980 rate. Infectious syphilis (primary and secondary stages) increased 35% from a rate of 26.9 to 36.3. In terms of actual number of cases of primary and secondary syphilis, there were 5,329 reported in 1981 (in excess of 100 new cases per week); this is the largest number of syphilis cases in a single year in Texas.

Thirty-seven cases of congenital syphilis were reported among newborns in Texas during 1981. This represents an increase of 164% over the 14 reported in 1980, and is the highest number of reported cases since 1971 when 52 were reported. Of the 37 cases reported, 34 were live births and three were stillbirths two of the 34 infants expired within six days of delivery. Among the reported cases, five (13.5%) were white, 18 (48.6%) were black, and 14 (37.8%) were Hispanic. The mean age for the mothers of these infants was 22 years. Eleven (29.7%) were in the 15-19 year age group; none of this group was married. Among all 37 mothers, 16.2% were married, 13.5% were separated, and 70.3% were single. It is also significant that 25 of the 37 mothers delivering infants with congenital syphilis received no prenatal care.

Other Venereal Diseases

The Texas Department of Health received reports of eleven cases of lymphogranuloma venereum (LGV), seven cases of chancroid, and one case of granuloma inguinale during 1981. The number of reports of these infections has been steadily declining since the mid 1970s.

VIRAL HEPATITIS

"Viral hepatitis" refers to an acute inflammatory disease of the liver whose etiology can be attributed to one of several viruses. There are two major types of viral hepatitis which can be identified by serologic methods.

Hepatitis type A (infectious hepatitis, epidemic jaundice, epidemic hepatitis) is an acute viral disease commonly associated with children and young adults. The incubation period ranges from 15 to 50 days, and the clinical picture consists of an abrupt onset of malaise, anorexia, gastrointestinal symptoms, and flu-like illness, followed by such signs as dark urine, light-colored stools, and jaundice. Transmission ,of hepatitis A follows the fecal-oral route, and the disease is spread either by person-to-person contact or from a common source such as in food-borne or water-borne outbreaks.

In contrast, hepatitis type B (serum hepatitis, homologous serum jaundice) is transmitted **person-to-**person via **parenteral** contact with infected blood or blood products or via close personal contact, especially sexual contact. The disease is commonly seen in adolescents and adults, with distinct population groups such as health professionals, male homosexuals, patients and staff of hemodialysis units, and close personal contacts of acute and chronic hepatitis type B cases, who are at increased risk of acquiring the infection. The incubation period for hepatitis type B runs from 50-180 days, and although symptoms may resemble those for hepatitis type A, their onset is gradual. Hepatitis type B infections may range in severity from a mild subclinical illness to an acute symptomatic one. Complications occur in 10% of symptomatic cases; these include chronic carrier states in otherwise healthy individuals, chronic persistent hepatitis, chronic active hepatitis, and **fulminant** hepatitis.

Viral hepatitis cases are reported to the Texas Department of Health under one of three classifications: hepatitis A, hepatitis B, or hepatitis type unspecified. The use of the latter category often reflects that definitive hepatitis serology has not been done.

Recently, cases of viral hepatitis distinctly different from hepatitis type A and from hepatitis type B have emerged with the advent of specific laboratory testing for hepatitis types A and B. These cases, designated non-A, non-B, hepatitis, have been included in the "hepatitis type unspecified category at this time, but represent a more specific diagnosis, based on the exclusion of hepatitis A and B viral markers. The epidemiology of non-A, non-B hepatitis is usually similar to that for hepatitis B. Non-A, non-B, hepatitis is closely associated with post-transfusion hepatitis; fully 80-90% of all transfusion-transmitted hepatitis are attributed to non-A, non-B hepatitis. There seems to be at least two distinguishable varieties of non-A, non-B hepatitis.

In 1981, the total number of viral hepatitis cases reported in Texas was 5,152. This figure represents only 86% of the total number of hepatitis cases reported in 1980 which was 5,991, and marks the first decline in reported cases of hepatitis since 1976, when the statewide total was 3,095. Cases were reported from 168 counties across the state.

There were 2,721 cases of hepatitis type A reported throughout Texas for 1981. As in previous years, cases continued to cluster around the major metropolitan areas and counties such as Bexar (12.2% of all hepatitis A cases), Cameron (3.1%), Dallas (12.6%), El Paso (5.5%), Harris (18.8%), Tarrant (7.5%), and Travis (4.6%). The incidence rate continued to drop, and for 1981, this value stood at 18.54 cases per 100,000 population. Incidence rates for hepatitis A in Texas during 1980 and 1979 were 20.93 and 24.57, respectively. There were ten deaths reported for hepatitis A cases, thus giving a case-fatality ratio of 0.37%.

Cases were nearly equally divided among males and females (52% and 48%, respectively). The distribution of cases by racelethnicity for each category of viral hepatitis is given in Table 20. As previously mentioned, hepatitis A occurs most frequently in children and young adults. The age distribution of cases in 1981 followed the same pattern as seen in previous years. That is, cases occurred in all age groups, but the majority of cases was reported in persons age 5-34. The number of cases reported in very young children probably represents only a fraction of the actual number; asymptomatic cases are common among children less than two years of age. When age grouping and race/ethnicity are taken together, an interesting trend becomes apparent. In whites, 77.5% of all cases fall in the age range 5-34 years, and of these, almost half (45.6%) occur in young adults age 20-29. This trend is seen more frequently where day-care centers are involved, and the reported incidence of hepatitis A exists as a function of intrafamilial spread of illness after a young child initially contracts the disease from outside the home. With children becoming infected at an early age, there will probably be a decrease in the number of cases reported in adults as time goes on. This same age distribution of cases was also true for blacks.

Hepatitis A cases reported for Hispanics in 1981 followed a slightly different pattern. The principle age group affected here was children age 4-15, with 53.8% of all Hispanic cases reported in that age group. The percentage distribution dropped off rapidly thereafter, indicating that there were fewer susceptibles of adult age as compared to adult whites and adult blacks.

The steady increase in the number of hepatitis type unspecified cases reported in Texas spanned a seven-year period ending with the 1980 calendar year when 2,194 cases were reported. In 1981, there were 1,608 cases of unspecified hepatitis, reported from 117 counties. The case total thus represents only 73.2% of the 1980 total. As with hepatitis type A, hepatitis unspecified occurred statewide, but the majority of cases listed residence in a major metropolitan area. The incidence rate per 100,000 population was 10.95 cases as compared to the 1980 rate of 15.42. There were 17 deaths associated with hepatitis unspecified, the majority (52.9%) of which occurred to persons age 50 or older.

TABLE 20

REPORTED CASES OF VIRAL HEPATITIS BY RACEIETHNICITY, TEXAS, 1981

RACE/ETHNICITY	ITIS A	HEPATITIS UNSPECIFIED	HEPATITIS B
White	53.0%	50.4%	57.5%
Hispanic	35.8	31.6	14.2
Black	7.9	8.9	17.4
Asian/Pacific Islander	0.4	0.5	1.3
American Indian	—	0.1	—
Race Not Specified	2.9	8.5	9.6
	100.0%	100.0%	100.0%
Total Cases Reported	2721	1608	823

TABLE 21

POSSIBLE SOURCES OF EXPOSURE TO VIRAL HEPATITIS TYPE B

SOURCE OF EXPOSURE	CASES	PERCENTAGE OF TOTAL CASE FORMS SUBMITTED (124)
Transfusion, Dialysis, Surgery, or Blood Products Received	18	14.5%
Dental Work, Parenteral Exposure, Staff or Client at Institutions	17	13.7
Drug Related	12	9.7
Health Professional and Laboratory Personnel	12	9.7
Cases Identified After Hospital Admission	8	6.5
Family or Other Personal Contact	6	4.8
Sexual Contact	5	4.0
Exposure Source Not Specified	46	37.1
	124	100.0%

The epidemiology of viral hepatitis type unspecified approximates that for hepatitis type A. Although specific serologic tests for hepatitis A and B viral markers are becoming more readily available, many cases of viral hepatitis, especially those of type A, remain labeled as hepatitis unspecified. As with hepatitis type A, children and young adults are especially at risk, with 69.5% of cases reported in persons under 30 years of age.

Cases were approximately evenly divided among males and females (54% and 46%, respectively), and the patterns and trends based on age and race/ethnicity were similar to those for hepatitis type A.

Non-A, non-B hepatitis is becoming a distinct and important subset of viral hepatitis type unspecified because of its association with post-transfusion hepatitis and with chronic hepatitis. As physicians continue to make better use of specific hepatitis A and B serologic tests, non-A, non-B hepatitis will be better recognized and the scope of the disease further defined. In 1981, the Texas Department of Health received 15 case reports in which a diagnosis of non-A, non-B hepatitis was specified. Seven of these cases (46.7%) were associated with some form of blood procedure, either transfusion, dialysis, or surgery. Three cases (20.0%) specified person-to-person contact, and two cases (13.3%) contracted the disease while working in a health-care field. The remaining three cases (20.0%) did not report a possible source of exposure.

The number of hepatitis type B cases reported in 1981 from 77 counties throughout Texas was 823. These figures were almost identical to those in 1980 (819 cases reported from 75 counties). The incidence rate for hepatitis B in 1981 was 5.61 cases per 100,000 population. Only ten counties reported ten or more cases; these included Bexar, Dallas, El Paso, Grayson, Harris, Jefferson, Nueces, Tarrant, Travis, and Wichita Counties. There were 18 deaths associated with hepatitis B, thus giving a case-fatality ratio of 2.2%. These individuals, 16 of whom were white (88.9%), ranged in age from 19 to 79 years.

Unlike hepatitis A, hepatitis B occurs primarily in adolescents and adults. The majority (76.1%) of cases was reported in persons age 15-44, whereas only 4.0% of all cases were under 15 years of age. As in previous years, there was an uneven distribution of cases according to sex; 538 cases (65.4%) were male, and 284 cases (34.5%) were female. The distribution according to race/ethnicity is listed in Table 20.

Additional epidemiologic data (completed case investigation forms) were received on 124 hepatitis B patients, which represent 15.1% of the total number of cases. These forms indicated several sources of hepatitis B exposure which are provided in Table 21. Such information supports the epidemiologic association of hepatitis B with drug abuse, sexual or close personal contact with known hepatitis B cases, and contact with infectious blood and/or blood products.

Appendix

TABLE I

REPORTED CASES OF SPECIFIED NOTIFIABLE DISEASES, TEXAS 1973-1981

DISEASE	1981	1980	1979	1978	1977	1976	1975	1974	1973
Texas Population (in thousands)	14,680*	14,229	13,385	13,050	12,860	12,599	12,318	12,017	11,830
Amebiasis	604	355	301	210	216	146	129	186	195
Anthrax	-	-	-	-	-	-	-	-	-
Aseptic meningitis	622	432	753	405	315	312	362	228	180
Botulism	4	-	3	4	1	-	-	2	-
Brucellosis	45	28	28	23	33	77	29	18	36
Chickenpox	10,824	9,478	7,009	6,163	8,222	8,280	9,213	7,505	11,034
Cholera	3	-	-	-	-	-	-	-	1
Dengue	1	61	-	3	-	-	-	-	-
Diphtheria	-	1	-	-	4	1	6	9	18
Encephalitis, infectious	91[1]	63[1]	59[1]	47[1]	55[1]	35[1]	82[1]	30	43
Gonorrhea[2]	81,822	80,297	81,828	88,943	84,789	82,304	76,486	75,086	66,900
Hepatitis, type A	2,721	2,978	3,289	2,696	2,086	1,762	2,955	3,818	
Hepatitis, type B	823	819	685	586	650	497	490	357	5,189[3]
Hepatitis, type unspecified	1,608	2,194	1,840	1,198	1,064	836	573	116	
Influenza and flu-like illness	143,955	99,292	86,689	99,394	67,094	132,749	92,585	118,847	109,669
Leprosy (Hansen's disease)	33	32	31	28	26	16	17	18	23
Leptospirosis	9	3	8	14	6	6	10	5	1
Malaria	2	-	1	1	-	-	-	-	-
Malaria acquired ex U.S.	85	115	44	32	27	16	19	9	10
Measles (rubeola)	851	181	670	1,033	2,032	265	275	212	532
Meningococcal infections	327	145	166	144	147	140	151	116	111
Mumps	227	212	908	1,527	995	1,755	4,077	3,500	3,786
Pertussis	91	82	104	132	75	36	136	99	115
Plague	-	-	-	-	-	-	-	-	-
Poliomyleitis, paralytic	-	-	-	-	3	-	2	-	-
Psittacosis	9	8	5	5	6	2	6	58	5
Q, fever	-	2	2	-	1	2	2	-	1
Rabies in man	-	-	1	-	-	1	-	-	-
Rabies in animals	698	945	1,195	556	382	329	325	383	264
Relapsing fever	1	1	8	-	1	1	-	-	-
Rheumatic fever, acute	18	15	14	25	17	29	22	33	29
Rocky Mountain spotted fever	45	31	22	28	30	29	34	18	11
Rubella (German measles)	176	131	212	407	776	267	370	317	1,136
Rubella congenital syndrome	1	1	4	2	2	3	1	12	5
St. Louis encephalitis	4	68	5	-	9	77	37	**	**
Salmonellosis	2,612	2,456	2,198	1,199	1,045	917	1,110	994	1,211
Shigellosis	2,299	2,162	2,299	1,865	1,565	1,304	1,447	1,126	1,904
Smallpox	-	-	-	-	-	-	-	-	-
Strep throat, scarlet fever	46,072	32,113	37,526	29,433	31,595	36,385	35,861	43,817	44,613
Syphilis, Primary & secondary[2]	5,329	3,828	3,154	2,637	2,123	2,041	1,579	1,405	1,521
Tetanus	8	13	17	11	16	12	16	4	10
Trichinosis	2	6	4	2	11	2	4	4	4
Tuberculosis	2,015	2,075	2,090	2,160	2,326	2,454	2,600	2,311	2,224
Tularemia	23	12	11	6	11	10	19	8	8
Typhoid fever	127	67	67	40	28	18	19	13	14
Typhus fever, endemic	49	61	59	33	55	58	30	12	28
Typhus fever, epidemic	-	-	-	-	-	-	-	-	-
Venezuelan equine encephalitis	-	-	-	-	-	-	-	-	-
Western equine encephalitis	4	-	-	-	7	-	-	**	**
Yellow fever		-		-	-	-	-	-	

1. Exclusive of arboviral encephalitides
2. Civilian cases only
3. Includes all types of viral hepatitis

*Provisional
**Not Reportable

TABLE II

REPORTED CASES OF SPECIFIED NOTIFIABLE DISEASES
PER 100,000 POPULATION, TEXAS, 1973-1981

DISEASE	1981	1980	1979	1978	1977	1976	1975	1974	1973
Texas Population[1] (in thousands)	14,680*	14,229	13,385	13,050	12,860	12,599	12,318	12,017	11,830
Amebiasis	4.11	2.49	2.25	1.61	1.68	1.16	1.05	1.55	1.65
Anthrax	-	-	-	-	-	-	-	-	-
Aseptic meningitis	4.24	3.04	5.63	3.10	2.45	2.48	2.94	1.90	1.52
Botulism	0.03	-	0.02	0.03	0.01	-	-	0.02	-
Brucellosis	0.31	0.20	0.21	0.18	0.26	0.61	0.24	0.15	0.30
Chickenpox	73.73	66.61	52.36	47.23	63.93	65.72	74.79	62.45	93.27
Cholera	0.02	-	-	-	-	-	-	-	0.01
Dengue	0.01	0.43	-	0.02	-	-	-	-	-
Diphtheria	-	0.01	-	-	0.03	0.01	0.05	0.07	0.15
Encephalitis, infectious	0.62[1]	0.44[1]	0.44[1]	0.36[1]	0.43[1]	0.28[1]	0.67[1]	0.25	0.36
Gonorrhea[2]	557.37	564.32	611.34	681.56	659.32	653.26	620.93	624.83	565.51
Hepatitis, type A	18.54	20.93	24.57	20.66	16.22	13.99	23.99	31.77	
Hepatitis, type B	5.61	5.76	5.12	4.50	5.05	3.94	3.98	2.97	43.86[3]
Hepatitis, type unspecified	10.95	15.42	13.75	9.18	8.27	6.64	4.65	0.97	
Influenza and flu-like illness	980.62	697.81	647.66	761.64	521.73	1053.65	751.62	988.99	927.04
Leprosy (Hansen's disease)	0.22	0.22	0.23	0.22	0.20	0.13	0.14	0.15	0.19
Leptospirosis	0.06	0.02	0.06	0.11	0.05	0.05	0.08	0.04	0.01
Malaria	0.59	0.81	0.34	0.25	0.21	0.13	0.15	0.07	0.08
Measles (rubeola)	5.80	1.27	5.01	7.94	15.80	2.10	2.23	1.76	4.50
Meningococcal infections	2.23	1.02	1.24	1.11	1.14	1.11	1.23	0.97	0.94
Mumps	1.55	1.49	6.78	11.70	7.74	13.93	33.10	29.13	32.00
Pertussis	0.62	0.58	0.78	1.01	0.58	0.29	1.10	0.82	0.97
Plague	-	-	-	-	-	-	-	-	-
Poliomyelitis, paralytic	-	-	-	-	0.02	-	0.02	-	-
Psittacosis	0.06	0.06	0.04	0.04	0.05	0.02	0.05	0.48	0.04
Q fever	-	0.01	0.02	-	0.01	0.02	0.02	-	0.01
Rabies in man	-	-	0.01	-	-	0.01	-	-	-
Relapsing fever	0.01	0.01	0.06	-	0.01	0.01	-	-	-
Rheumatic fever, acute	0.12	0.11	0.10	0.19	0.13	0.23	0.18	0.27	0.25
Rocky Mountain spotted fever	0.31	0.22	0.16	0.22	0.23	0.23	0.28	0.15	0.09
Rubella (German measles)	1.20	0.92	1.58	3.13	6.03	2.12	3.00	2.64	9.60
Rubella congenital syndrome	0.01	0.01	0.03	0.02	0.02	0.02	0.01	0.10	0.04
St. Louis encephalitis	0.03	0.48	0.04	-	0.07	0.61	0.30	-	-
Salmonellosis	17.79	17.26	16.42	9.19	8.13	7.28	9.01	8.27	10.24
Shigellosis	15.66	15.19	17.18	14.29	12.17	10.35	11.75	9.37	16.09
Small pox	-	-	-	-	-	-	-	-	-
Strep throat, scarlet fever	313.84	225.69	280.36	225.54	245.68	288.79	291.13	364.63	377.12
Syphilis, primary & secondary[2]	36.30	26.90	24.30	20.20	16.51	16.20	11.41	11.69	12.86
Tetanus	0.05	0.09	0.13	0.08	0.12	0.10	0.13	0.03	0.08
Trichinosis	0.01	0.04	0.03	0.02	0.09	0.02	0.03	0.03	0.03
Tuberculosis	13.73	14.58	15.61	16.55	18.08	19.48	21.11	19.23	18.80
Tularemia	0.16	0.08	0.08	0.05	0.09	0.08	0.15	0.07	0.07
Typhoid fever	0.87	0.47	0.50	0.31	0.22	0.14	0.15	0.11	0.12
Typhus fever, endemic	0.33	0.43	0.44	0.25	0.43	0.46	0.24	0.10	0.24
Typhus fever, epidemic	-	-	-	-	-	-	-	-	-
Venezuelan equine encephalitis	-	-	-	-	-	-	-	-	-
Western equine encephalitis	0.03	-	-	-	0.05	-	-	**	**
Yellow fever	-	-	-	-	-	-	-	-	-

1. Exclusive of arboviral encephalitides
2. Civilian cases only
3. Includes all types of viral hepatitis

*Provisional
**Not reportable

TABLE III

DEATHS FROM SELECTED NOTIFIABLE DISEASES AND CONDITIONS OF INTEREST TO PUBLIC HEALTH[1]

TEXAS, 1973-1981

CAUSE OF DEATH	ICD[2]	1981	1980	1979	1978	1977	1976	1975	1974	1973
Amebiasis	006	2	6	5	2	4	5	3	5	5
Aseptic meningitis	047	2	2	2	-	-	5	2	1	5
Botulism	005.1	-	-	-	1	-	-	-	-	-
Brucellosis	023	-	-	-	-	-	1	-	2	-
Chickenpox	052	5	7	5	7	8	10	5	7	19
Diphtheria	032	-	1	-	-	1	1	-	2	-
Encephalitis, infectious[3]	049	11	16	9	12	16	12	15	15	15
Gonorrhea	098	-	1	1	2	1	-	2	2	1
Hepatitis, viral type A	070.0-070.1	2	8	8	33	34	42	41	52	52
Hepatitis, viral type B	070.2-070.3	19	23	14	11	6	5	8	6	11
Hepatitis, viral type unspecified	070.4-070.9	28	30	19	49	63	63	31	43	57
Influenza	487	133	70	30	190	64	567	211	110	249
Leprosy (Hansen's disease)	030	-	-	-	2	1	1	-	1	1
Leptospirosis	100	1	-	3	-	1	2	-	1	-
Malaria	084	-	-	-	-	-	-	-	-	-
Measles	055	-	-	1	1	3	-	3	2	1
Meningococcal infections	036	34	24	27	37	25	20	28	22	39
Mumps	072	-	-	-	1	-	2	-	-	-
Pertussis	033	-	-	-	-	1	-	1	1	1
Poliomyelitis, acute	045	1	-	-	-	-	-	-	-	1
Rheumatic fever, acute	390-391	6	2	10	5	11	4	8	12	9
Rocky Mountain spotted fever	082.0	1	-	1	-	1	-	3	2	1
Rubella	056	-	-	-	-	2	1	1	-	3
Rubella congenital syndrome	771.0	-	-	-	-	1	-	4	5	2
St. Louis encephalitis	062.3	-	1	-	-	-	4	3	-	-
Salmonellosis	003	8	5	2	3	3	1	5	2	5
Shigellosis	004	-	-	1	6	7	3	6	5	6
Strep throat, scarlet fever	034	-	1	2	-	4	1	2	-	1
Syphilis, total	090-097	13	12	12	15	13	18	26	15	31
Tetanus, excluding neonatal	037	4	5	5	4[4]	9[4]	4[4]	8[4]	3[4]	6[4]
Tetanus, neonatal	771.3	-	-	1	*	*	*	*	*	*
Trichinosis	124	-	-	-	-	-	-	-	-	-
Tuberculosis	010-018	134	111	112	163	176	211	200	237	247
Tularemia	021	-	-	1	-	-	1	-	1	3
Typhoid fever	002.0	-	1	1	-	-	-	1	-	-
Typhus fever, endemic	081.0	-	-	-	-	-	-	-	-	-
Child battering & other maltreatment	E967	22	15	13	26	41	28	**	**	**
Guillain-Barre syndrome	357.0	8	8	13	18	14	6	14	16	12
Mycobacteria infections	031	9	8	8	6	4	2	5	7	6
Reye syndrome	331.8	24	17	19	**	**	**	**	**	
Sudden infant death syndrome	798.0	332	323	340	298	293	217	203	175	

1. Source: Computer tabulations, Bureau of Vital Statistics
2. Category numbers of the Ninth Revision of the International Classification of Diseases, adapted 1975
3. Exclusive of arboviral encephalitides
4. Includes deaths due to neonatal tetanus

*Prior to 1979, neonatal tetanus deaths were included in total tetanus deaths

**Data not available

TABLE IV

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY MONTH OF REPORT, TEXAS, 1981

DISEASE	TOTAL	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Amebiasis	604	23	39	47	38	56	71	52	38	55	75	60	50
Aseptic meningitis	622	28	15	31	22	71	75	94	99	49	66	41	31
Botulism	4	-	-	-	-	-	-	-	-	2	-	-	2
Brucellosis	45	1	-	2	3	5	-	3	2	7	6	9	7
Chickenpox	10,824	908	1,263	2,177	2,266	1,692	753	280	135	83	157	376	734
Dengue	1	-	-	-	-	-	-	-	-	1	-	-	-
Encephalitis, infectious viral[1]	91	10	5	5	4	8	8	12	10	13	6	6	4
Gonorrhea[2]	81,822	6,845	6,400	6,349	7,777	5,935	7,661	6,180	6,876	8,427	6,657	6,542	6,173
Hepatitis, type A	2,721	197	215	298	200	271	195	171	181	144	342	201	306
Hepatitis, type B	823	77	39	71	61	84	49	67	65	52	100	61	97
Hepatitis, type unspecified	1,608	150	128	151	109	152	112	101	129	130	189	134	123
Influenza & flu-like illness	143,955	47,656	31,116	13,570	5,761	4,368	4,287	2,493	2,959	3,817	7,195	7,851	12,882
Leprosy (Hansen's disease)	33	2	4	2	1	3	-	8	-	-	7	-	6
Leptospirosis	9	-	-	-	-	-	-	-	1	2	3	3	-
Malaria	87	-	4	7	11	6	5	12	4	16	10	1	11
Measles	851	6	7	12	92	426	157	75	42	7	10	4	13
Meningococcal infections	327	39	71	33	24	33	13	13	23	13	11	17	37
Mumps	227	20	15	33	30	37	18	10	5	14	23	10	12
Pertussis	91	1	5	4	5	15	6	7	24	7	8	4	5
Psittacosis	9	-	-	-	-	-	4	1	3	-	1	-	-
Relapsing fever	1	-	-	-	-	-	-	-	-	-	-	-	1
Rheumatic fever, acute	18	2	3	1	1	4	3	-	-	1	-	1	2
Rocky Mountain spotted fever	45	-	-	1	1	5	4	10	7	5	4	5	3
Rubella	176	8	15	9	12	34	26	12	14	6	18	8	14
Rubella congenital syndrome	1	-	-	1	-	-	-	-	-	-	-	-	-
St. Louis encephalitis	4	-	-	-	-	-	-	-	-	1	-	2	1
Salmonellosis, excluding typhoid	2,612	132	80	122	103	270	179	223	249	287	429	275	263
Shigellosis	2,299	102	66	119	94	185	216	208	315	327	353	150	164
Strep throat and scarlet fever	46,072	4,004	4,792	5,918	5,242	4,636	3,464	2,180	2,616	1,957	3,069	3,823	4,371
Syphilis, primary & secondary[2]	5,329	343	413	413	479	391	485	417	377	569	447	463	532
Tetanus	8	-	1	-	-	-	-	-	2	2	-	1	2
Trichinosis	2	-	-	1	-	-	-	-	-	-	-	-	1
Tuberculosis	2,015	160	142	190	198	167	140	218	150	154	203	171	122
Tularemia	23	1	-	-	-	1	7	1	2	1	3	5	2
Typhoid fever	127	-	2	2	5	2	6	11	8	1	77	7	6
Typhus fever, endemic	50	-	-	-	3	6	4	12	5	2	4	7	7
Western Equine Encephalitis	4	-	-	-	-	-	-	-	-	2	-	-	2

1. Exclusive of arboviral encephalitides.
2. Civilian cases only.

TABLE V

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY AGE, TEXAS, 1981

DISEASE	TOTAL	<1	1-4	5-9	10-14	15-19	20-24	25-29	30-39	40-49	50-59	60+	Age Not Specified
Amebiasis	640	21	43	66	36	29	53	70	99	62	39	31	55
Aseptic meningitis	622	188	72	74	49	42	63	61	40	9	10	6	8
Brucellosis	45	-	2	-	-	2	5	7	11	11	3	4	-
Chickenpox	10,824	280	2,741	3,872	638	308[1]	→						2,985
Encephalitis, infectious viral[2]	91	4	7	9	14	9	8	9	9	4	4	11	3
Gonorrhea[3]	81,822	→	62[4]	46	522	18,548	32,106	17,700	10,536	1,778	403	121	-
Hepatitis, viral type A	2,721	4	145	494	360	306	440	338	322	97	58	89	68
Hepatitis, viral type B	823	4	9	12	8	96	194	164	138	70	46	61	21
Hepatitis, viral type unspecified	1,608	7	78	235	172	175	261	189	183	86	53	77	92
Leprosy (Hansen's Disease)	33	-	-	-	-	1	3	1	7	4	7	10	-
Leptospirosis	9	-	-	-	1	2	2	-	-	-	1	3	-
Malaria	87	1	2	5	5	12	17	15	14	7	6	2	1
Measles	851	212	259	126	93	107	26	8	8	1	1	-	10
Meningococcal infections	327	64	123	12	13	26	22	13	7	14	10	14	9
Mumps	227	4	42	55	71	9	9	6	6	7	7	1	10
Pertussis	91	59	22	4	1	-	-	-	-	-	-	-	5
Psittacosis	9	-	-	-	-	-	1	1	4	1	-	2	-
Relapsing fever	1	-	-	-	-	-	-	-	-	-	-	-	1
Rheumatic fever, acute	18	-	2	8	3	3	1	1	-	-	-	-	-
Rocky Mountain spotted fever	45	-	6	5	7	4	1	6	2	3	3	8	-
Rubella	176	60	51	27	16	5	7	3	3	-	-	1	3
Rubella congenital syndrome	1	1	-	-	-	-	-	-	-	-	-	-	-
Salmonellosis	2,612	686	529	131	84	88	113	89	123	101	98	185	385
Shigellosis	2,299	128	820	375	112	62	139	138	136	46	42	75	226
Syphilis, primary and secondary[3]	5,329	→	1[4]	2	35	759	1,640	1,290	1,151	315	119	17	-
Tetanus	8	1	1	1	-	-	-	-	-	-	-	5	-
Trichinosis	2	-	-	-	-	-	-	1	-	-	1	-	-
Tuberculosis	2,015	→	86[4]	41	23	57	140	185	313	292	317	561	-
Tularemia	23	-	-	-	2	2	-	4	3	4	6	3	-
Typhoid fever	127	1	15	12	12	16	17	26	10	6	4	5	3
Typhus fever, endemic'	50	-	2	3	10	1	3	5	8	4	5	9	-

1. Includes all cases 15 years of age and older.
2. Exclusive of arboviral encephalitides.
3. Civilian cases only.
4. Includes infants under one year of age.

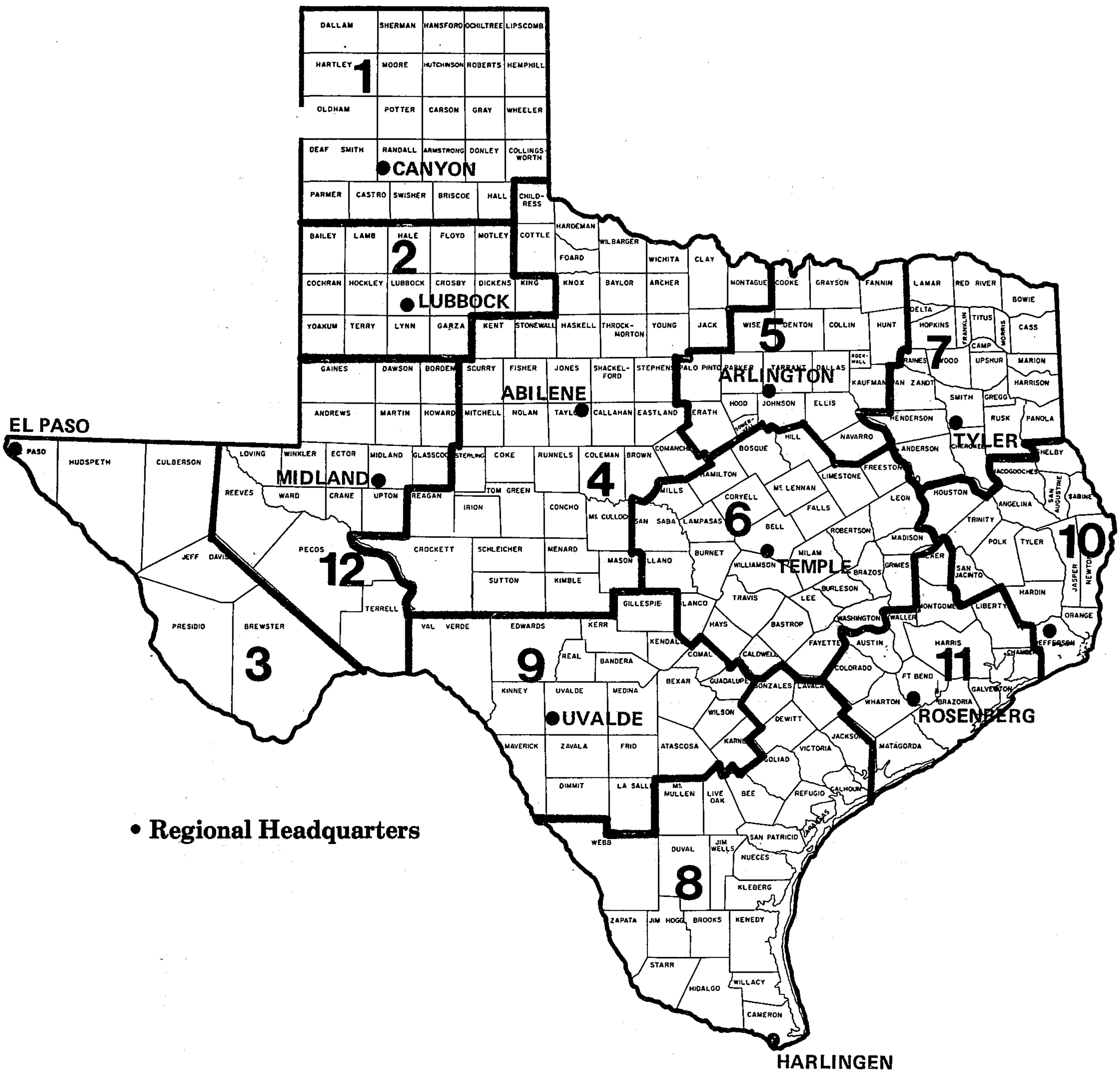
TABLE VI

REPORTED CASES OF SELECTED NOTIFIABLE DISEASES BY PUBLIC HEALTH REGION, TEXAS, 1981

DISEASE	TOTAL	1	2	3	4	5	6	7	8	9	10	11	12	Military[1]
Amebiasis	604	1	11	23	12	50	180	5	215	13	4	76	13	1
Aseptic meningitis	622	3	8	11	11	316	24	18	12	36	3	164	2	14
Brucellosis	45	1	1	5	-	13	4	2	3	8	2	5	1	-
Chickenpox	10,824	276	183	230	901	1,117	838	1,375	2,420	611	413	1,922	398	140
Encephalitis, infectious viral[2]	91	3	9	3	4	22	11	4	4	6	7	16	2	-
Gonorrhea	84,681	1,443	1,442	2,309	1,514	23,369	6,687	3,440	2,215	4,708	3,603	30,122	970	2,859
Hepatitis, viral type A	2,721	21	68	156	87	714	227	70	267	396	34	592	60	29
Hepatitis, viral type B	823	6	7	66	22	257	67	18	72	38	18	213	3	36
Hepatitis, viral type unspecified	1,608	90	78	56	67	251	260	58	264	80	71	266	16	51
Influenza & flu-like illness	143,955	13,014	6,001	7,165	15,556	8,968	26,556	7,684	21,046	15,066	4,280	5,618	8,643	4,348
Leprosy (Hansen's disease)	33	-	-	1	1	2	-	1	19	-	-	9	-	-
Leptospirosis	9	-	-	-	-	-	1	3	-	1	-	4	-	-
Measles	851	2	1	226	8	22	17	8	316	120	22	102	6	1
Meningococcal infections	327	9	5	4	5	84	24	16	9	11	22	130	5	3
Mumps	227	14	3	23	10	46	7	6	41	19	5	42	7	4
Pertussis	91	4	-	4	6	43	12	3	8	4	1	2	4	-
Psittacosis	9	2	-	-	-	1	1	1	-	1	1	2	-	-
Relapsing fever	1	-	-	-	-	1	-	-	-	-	-	-	-	-
Rheumatic fever, acute	18	1	1	3	1	1	3	-	1	2	4	1	-	-
Rocky Mountain spotted fever	45	1	1	-	3	15	6	12	-	1	5	1	-	-
Rubella	176	5	2	5	4	37	13	18	55	8	10	12	4	3
Salmonellosis	2,612	34	63	62	54	464	213	107	272	242	71	967	27	36
Shigellosis	2,299	44	83	215	16	341	160	39	381	219	35	733	22	11
Strep throat and scarlet fever	46,072	980	2,238	223	4,901	6,754	3,959	2,862	9,650	5,507	1,498	2,065	1,739	3,696
Syphilis, primary and secondary	5,440	23	131	100	15	1,661	309	240	158	219	218	2,172	83	111
Tetanus	8	-	-	1	1	1	-	1	1	1	-	2	-	-
Trichinosis	2	1	-	-	-	1	-	-	-	-	-	-	-	-
Tuberculosis	2,015	23	22	80	48	358	98	85	265	188	83	739	26	-
Tularemia	23	-	-	-	1	2	1	19	-	-	-	-	-	-
Typhoid fever	127	1	2	-	-	7	1	-	12	90	4	10	-	-
Typhus fever, endemic	50	-	-	-	1	2	-	-	45	2	-	-	-	-

1. Includes military installations and VA hospitals
2. Exclusive of arboviral encephalitides

Texas Department of Health
Public Health Regions



• **Regional Headquarters**

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 Dr.)
806/655-7151
TEX-AN 844-2801

Public Health Region 2/12
C.R. Allen, Jr., M.D.
Regional Director Public Health
Texas Department of Health
Public Health Region 2
3411 Knoxville
Lubbock, Texas 79414
806/797-4331
TEX-AN 862-9780

Public Health Region 3
John L. Bradley, M.D.
Regional Director Public Health
Texas Department of Health
Public Health Region 3
P.O. Box 10736
El Paso, Texas 79997
(Location: 2300 East Yandell, 79903)
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
Public Health Region 4
301 Oak Street, 2nd Floor
Old Courthouse
Abilene, Texas 79602
915/673-5231
TEX-AN 847-7011

Public Health Region 5
Hal J. Dewlett, M.D., M.P.H.
Regional Director Public Health
Texas Department of Health
Public Health Region 5
P.O. Box 6229
Arlington, Texas 76011
(Location: 701 Directors Drive)
817/460-3032
TEX-AN 833-9011

Public Health Region 6
Charles C. Eaves, M.D.,
Regional Director Public Health
Texas Department of Health
P.O. Box 190
Temple, Texas 76501
(Location: 2401 S. 31st St., Alexander Nursing Bldg., Scott & White Hospital)
817/778-6744
TEX-AN 820-1431

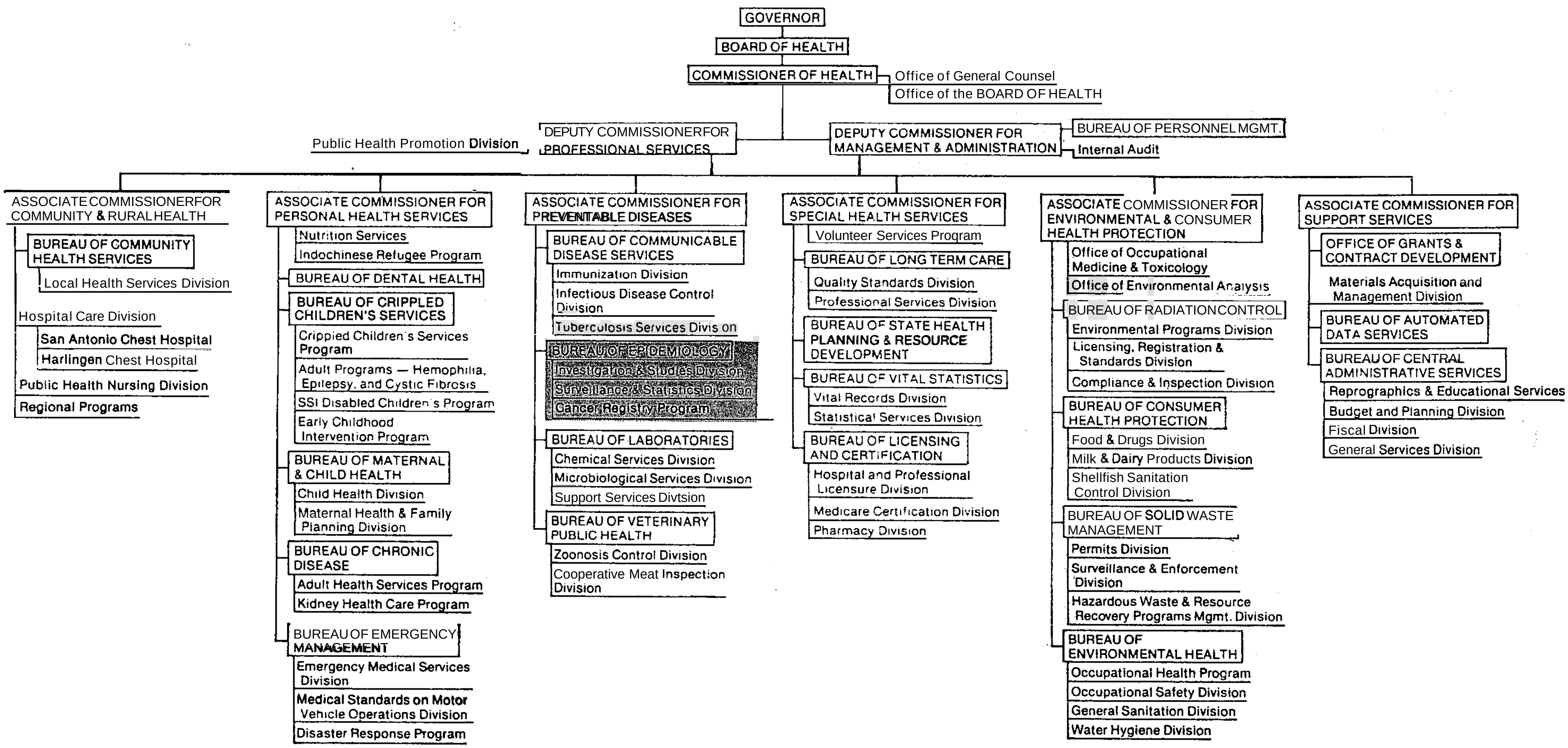
Public Health Region 7/10
Marietta Crowder, M. D.
Regional Director Public Health
Texas Department of Health
Public Health Region 7/10
P.O. Box 2501
Tyler, Texas 75701
(Location: 1517 West Front St.)
214/595-3585
TEX-AN 830-6011

Public Health Region 8
Charles B. Marshall, Jr.,, M.D., M.P.H.
Regional Director Public Health
Texas Department of Health
Public Health Region 8
P.O. Box 592
Harlingen, Texas 78550
(Location: 500 S. Rangerville Rd.)
512/423-0130
TEX-AN 820-4501

Public Health Region 9
Rodger G. Smyth, M.D., M.P.H.
Regional Director Public Health
Texas Department of Health
Public Health Region 9
P.O. Drawer 630
Uvalde, Texas 78801
(Location: Old Memorial Hosp., Garner Field Rd.)
512/278-7173
TEX-AN None

Public Health Region 11
Nina M. Sisley, M.D., M. P.H.
Regional Director Public Health
Texas Department of Health
Public Health Region 11
1110 Avenue G
Rosenberg, Texas 77471
713/342-8685
TEX-AN 851-3000

Texas Department of Health



REPORTABLE DISEASES OF TEXAS (1982)

In Texas, specific rules and regulations for the control of communicable diseases have been approved by the State Board of Health under the legal authority vested in them by Articles 4418a, 4419, and 4477 of the Texas Revised Civil Statutes. These include the designation of certain diseases as "reportable" as well as the establishment of the mechanics for reporting communicable diseases, control measures, and the use of quarantine procedures. The following diseases are reportable in Texas:

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

Botulism	Plague	Smallpox'
Cholera	Poliomyelitis, paralytic	Yellow fever
Diphtheria		

Diseases **Reportable** by Name, Address, Age, Sex, and **Race/Ethnicity**

Amebiasis
Anthrax
Aseptic meningitis
Botulism
Brucellosis
Cholera
Diphtheria
Encephalitis (specify etiology)
Hansen's disease (leprosy)
Hepatitis, viral
  Type A
  Type B
  unspecified
Leptospirosis
Malaria
Measles
Meningococcal infections
Mumps
Pertussis
Plague
Poliomyelitis, paralytic
Psittacosis
Q fever
Rabies in man
Relapsing fever
Rheumatic fever, acute
Rocky Mountain spotted fever
Rubella
Rubella congenital syndrome
Salmonellosis
Shigellosis
Smallpox
Tetanus
Trichinosis
Tularemia
Typhoid fever
Typhus fever,
  endemic (murine)
  epidemic
Yellow fever

Diseases Reportable by Numerical Totals

Chickenpox
Influenza and flu-like illness
Streptococcal sore throat (including scarlet fever)

In addition to the requirements of individual case reports, any unusual or group expression of illness which may be of public health concern should be reported to the local health authorities or the State Epidemiologist by the most expeditious means (AC 512-458-7328 or Tex-An 824-9328). Epidemiologic investigative consultation and assistance are available from the Texas Department of Health upon request.

If no cases occurred during the week, write "NONE" across the card. Upon completing your report, fold the top flap over the bottom flap and seal and return. Your cooperation in securing these reports promptly is greatly appreciated.

NO POSTAGE NECESSARY IF MAILED IN THE UNITED STATES

IE REPLY ᆞ ! RD
FIRST CLASS PERMIT NO. 239 AUSTIN, TEXAS

POSTAGE WILL BE PAID BY ADDRESSEE

NOTIFIABLE DISEASE REPORT FOR WEEK ENDING ____________

Leave This Space Blank	Disease	Patient (Last, First, Middle Initial)	Age*	Sex	Race†
		Name Address City			
		Name Address City			
		Name Address City			
		Name Address City			
		Name Address City			
		Name Address City			
		Name Address City			
		Name Address City			
		Name Address City			
		Name Address City			
		Name Address City			
		Name Address City			

*REPORT AGE AT LAST BIRTHDAY. IF LESS THAN 1 YR. REPORT BY MONTH.

†ENTER CODE AS APPROPRIATE

WHITE	1
HISPANIC	[illegible]
BLACK	
AMERICAN INDIAN or ALASKAN NATIVE	4
ASIAN or PACIFIC ISLANDER	5
UNKNOWN	9

CHECK FOR ADDITIONAL SUPPLIE

☐ J-27 (VD REPORTING)
☐ TB-15 (TB REPORTING)

REPORT BY NUMBER OF CASES PER AGE GROUP:

		<1 yr.	1-4	5-9	10-14	15+	Unk.
052	CHICKENPOX						

REPORT BY NUMBER OF CASES:.

487—Influenza & flu-like illness ____________

034—Streptococcal sore throat ____________

034—Scarlet fever ____________

FORM C-15 (REV. 6-79)

Texas Department of Health