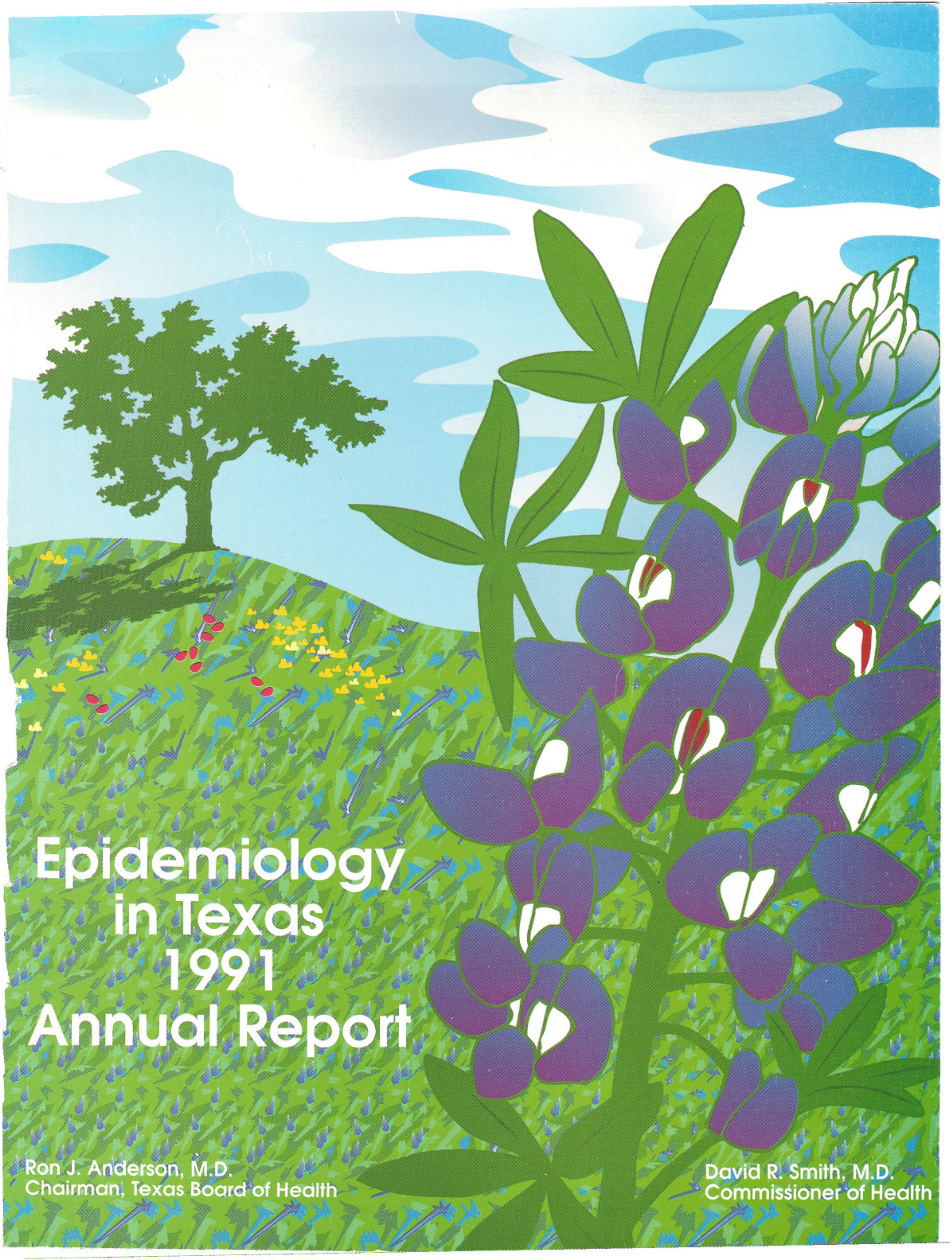

Epidemiology in Texas 1991 Annual Report

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

David R. Smith, M.D.
Commissioner of Health

EPIDEMIOLOGY IN TEXAS

1991 ANNUAL REPORT

Infectious Diseases Program
Environmental Epidemiology Program
Injury Control Program

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Foreword

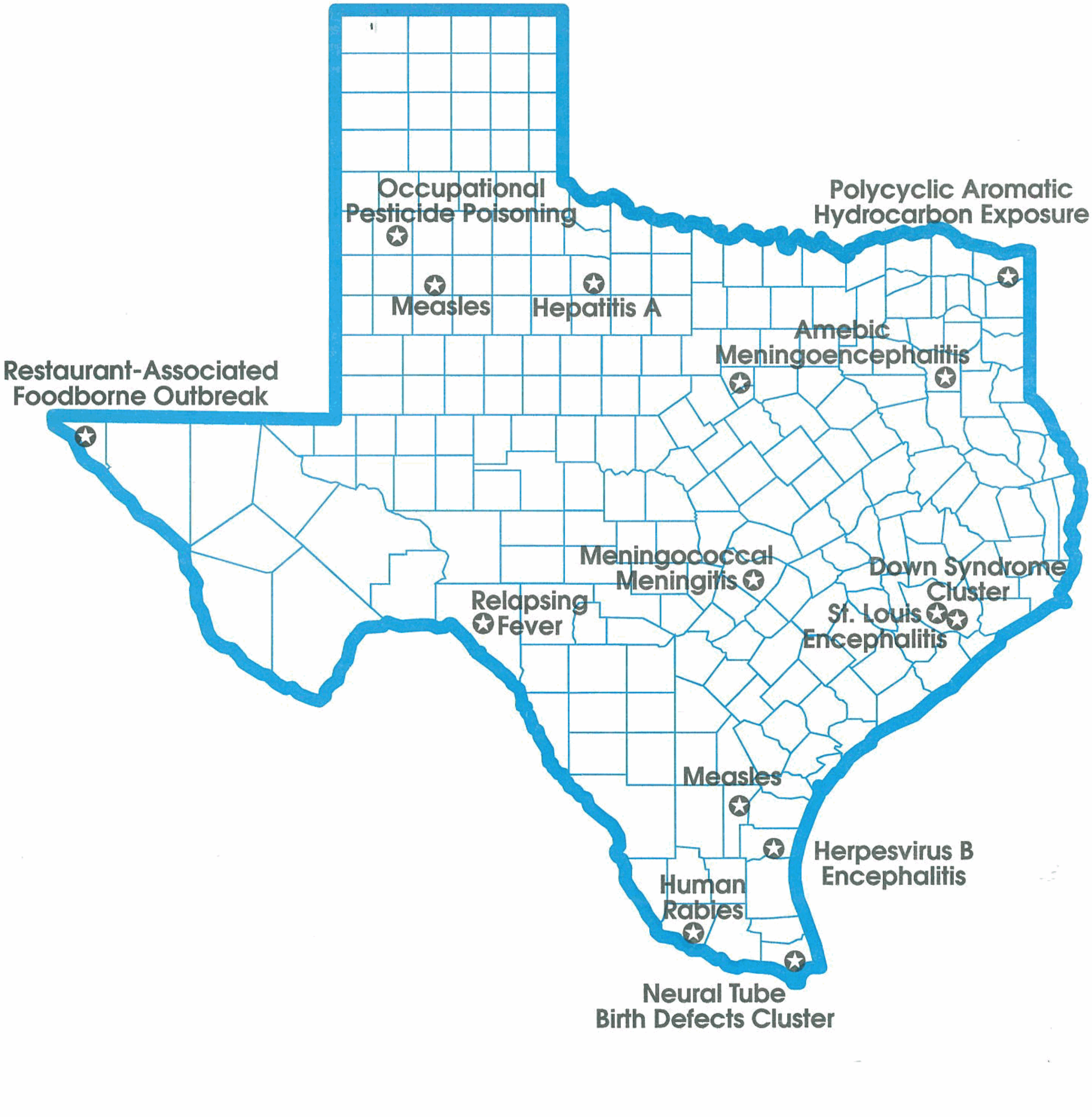
Measuring the impact and magnitude of important causes of human illness and premature mortality is among the most important functions of a public health agency. The Epidemiology Division works to identify the occurrence and distribution of illnesses, harmful exposures, and injuries throughout Texas. Causes of human suffering do not remain static; progress is made in controlling one condition while we sometimes appear to lose ground in our fight against others.

This report describes trends and selected investigations which were conducted in 1991. The number of cases of aseptic meningitis increased more than 50%, and we noted a significant decline in the number of invasive infections due to *Haemophilus influenzae*. Conditions for which we have effective prevention strategies still occur with disturbing regularity. Treating ten cases of tetanus cost $878,500; preventing those cases would have cost pennies. Tuberculosis, once declining at an impressive rate, now has reemerged as an important communicable disease threat.

A 14-month investigation of anencephaly in Cameron County failed to identify a specific cause of an increase in the incidence of that birth defect. It has focused attention on the deeply rooted problems of border health, environmental health, and birth defects surveillance. An examination of injury mortality indicated that, for the first time in Texas, firearm-related deaths exceeded motor vehicle crashes as the leading cause of injury deaths. Rabies in animals significantly increased in 1991.

Understanding the causes of human illness and injury and developing aggressive and appropriate methods to control them are difficult tasks. With the support of private and public health providers, local, state, and federal governments, and, of course, the citizens of the state, the Texas Department of Health will continue to study and work toward better control of infectious diseases, harmful exposures in the workplace and environment, and injuries which threaten the health of the citizens of Texas.

Figure 1
Selected Investigations, Outbreaks, and Surveillance Activities in Texas, 1991



INTRODUCTION

HISTORY OF PUBLIC HEALTH IN TEXAS

The first real interest in public health in Texas began in the 1800s when most of Texas was unsettled frontier territory. The primary public health concerns in these early years were the prevention and control of epidemic diseases that were so prevalent in Texas. Epidemics of yellow fever along the Gulf Coast brought death to thousands of Texas residents, and by the mid-1800s, smallpox had spread to the inland towns of the state. These outbreaks led to passage of the Quarantine Act of 1856 giving cities and counties in Texas the authority to establish their own quarantine regulations appropriate for their respective areas.

In April 1879, as government officials were getting ready for the upcoming "sickly season," action was taken to revise the quarantine laws, and Governor O.M. Roberts appointed Robert Rutherford to be the first State Health Officer of Texas. This eventually led to the creation in 1891 of Texas' first state health agency, the Texas Quarantine Department. As the population of Texas grew, a greater interest in maintaining complete and accurate records of the public's health developed. As a result, the Texas Quarantine Department was reorganized in 1903 and renamed the Department of Public Health and Vital Statistics, and birth and death records for the state began to be recorded and analyzed. The state's health agency has undergone numerous reorganizations since it first began, as well as several name changes which all reflect its expanding scope and purpose.

Disease Reporting

Communicable disease reporting began as a way to determine the prevalence of diseases which could threaten the public's health. The first reporting law, the Texas Sanitary Code, was passed in 1910, a year after the first State Board of Health was appointed. This code required the reporting of diseases that were common in Texas at the time--anthrax, Asiatic cholera, bubonic plague, diphtheria, epidemic dysentery, epidemic typhus, smallpox, trachoma, typhoid, and yellow fever. In May 1920, the reporting of communicable diseases actually began as the procedures were put into place. Since that time, disease surveillance in Texas has relied on a reporting system whereby physicians notify their local health authorities of infectious and other reportable diseases and conditions. These reports are then forwarded to the Texas Department of Health. The collection of these data allow health officials and agencies to plan more effective programs and activities to prevent and control disease throughout the state.

Improved general sanitation and the use of antibiotics and vaccines have had quite an impact on disease trends, changing them dramatically over the years. Consequently, the public health laws of Texas have had to be revised. The Texas Board of Health has the authority to adopt specific rules and regulations relating to the prevention, reporting, and control of communicable diseases and to designate which diseases are "reportable." Acquired immune deficiency syndrome (AIDS) and Reye syndrome were added to the list of reportable diseases in Texas in March of 1983. In July 1984, rheumatic fever and smallpox were removed from the list, and bacterial meningitis, campylobacteriosis, coccidioidomycosis, dengue, histoplasmosis, legionellosis, toxic shock syndrome, and viral hemorrhagic fevers were added.

In September 1985, after the Occupational Disease Reporting Act was passed, the Texas Board of Health made acute occupational pesticide poisoning, asbestosis, elevated blood lead levels in adults (blood lead level $\geq$40 mcg/dl in persons $\geq$15 years of age), and silicosis reportable in Texas. Then in September 1986, *Haemophilus influenzae* infections, hepatitis type D (delta agent), *Listeria* infections, Lyme disease, and *Vibrio* infections were added to the list of reportable diseases in Texas, and the reporting of meningitis was expanded to include all non-viral etiologic agents, bacterial and fungal. Streptococcal sore throat and scarlet fever were dropped from the list of reportable diseases at that time. Most recently, human immunodeficiency virus (HIV) and *Chlamydia trachomatis* infections were added to the list of reportable diseases in September 1987.

Disease Surveillance

Public health agencies use surveillance to monitor the health of their communities. This information is useful in order to provide a factual basis to set program priorities and to plan, implement, and evaluate their public health programs in order to protect the public's health. Epidemiologic surveillance includes the ongoing systematic collection, analysis, interpretation, and dissemination of a variety of health data including demographic, environmental, laboratory, morbidity, and mortality data. Surveillance also includes obtaining and evaluating information on animal reservoirs and vectors, investigating epidemics and individual cases of diseases and/or conditions, and conducting special studies and surveys.

The objective of surveillance is to determine the extent of disease and the risk of transmission so that control measures can be applied effectively and efficiently. Surveillance data must be current and complete if the actual occurrence and distribution of disease is to be understood. The Epidemiology Division, Texas Department of Health, is responsible for coordinating infectious and occupational disease and injury surveillance in Texas, as well as the surveillance of environmentally related conditions throughout the state. These activities are carried out by the Division's three programs, the Infectious Diseases Program, the Environmental Epidemiology Program, and the Injury Control Program.

The Reporting System

The Communicable Disease Prevention and Control Act (Chapter 81, Health and Safety Code) requires physicians, dentists, and veterinarians to report, after their first professional encounter, each patient examined who is suspected of having a reportable disease or condition. Certain individuals employed in hospitals, laboratories, and schools are also required to report. Chief administrative officers of hospitals, medical directors of HIV counseling and testing services, and school authorities of public and private schools and institutions of higher learning can designate employees to be responsible for disease reporting. Decisions as to which diseases and conditions will be reportable in Texas are made by the Texas Board of Health based upon the recommendations of public health officials. Detailed rules on disease reporting and the duties of local health authorities can be found in Article 97, Title 25, Texas Administrative Code.

All city and county health departments and health districts, state schools, state hospitals, veterans' hospitals, and military installations have been designated as reporting agents. There are numerous public and private hospitals, physicians in private practice, and other health professionals who also report to the Epidemiology Division on a routine basis. This system assures the rapid transfer of data from physicians, nurses, hospitals, and laboratories to local and regional health departments who in turn forward these data to the Texas Department of Health.

The *Rules & Regulations for the Control of Communicable and Sexually Transmitted Diseases & Reporting of Occupational Diseases* (TDH Stock No. 6-101) require that all disease reports--with three exceptions--include the patient's name, age, sex, race, city of residence, the physician's name, date of onset, and method of diagnosis. The exceptions are influenza and flu-like illnesses which are reported by number of cases only; chickenpox which is reported by number of cases by age group; and HIV infections which are reported by month and year of birth, sex, race, county of residence, and date tested. For specific diseases, additional epidemiologic data may be requested, and in outbreak situations, it may be necessary to identify susceptible individuals and to recommend specific control measures.

The Epidemiology Division has a toll-free telephone number (1-800-252-8239) to make morbidity and outbreak reporting easier on health professionals in Texas. This telephone is located in the Infectious Diseases Program in Austin and is answered in person during regular working hours. An answering machine will record calls received after hours and on weekends. A professional staff of epidemiologists and other medical personnel is also available to answer questions concerning infectious, environmental, and occupationally acquired diseases and conditions. Suspected cases of measles, rubella, pertussis, diphtheria, and polio are reported directly to the Immunization Division by calling 1-800-252-9152.

Disease reports may also be submitted in writing, usually on a weekly basis. The Epidemiology Division supplies reporting forms and business-reply envelopes to local and regional health departments and other designated reporting agents. The forms are to be completed and returned to the Epidemiology Division each week, or reports can be made directly by telephone. A copy of the "Notifiable Disease Report," EPI-1 (9/90), is provided in the Appendix of this report.

Morbidity data on reportable diseases and conditions are also obtained through other means such as laboratory reports, completed case investigation forms, and death certificates that have been filed with the Bureau of Vital Statistics, Texas Department of Health. These data are reviewed by the Surveillance Coordinator immediately upon receipt in the Epidemiology Division in Austin. The data may also be examined by epidemiologists to determine disease trends, fluctuations in morbidity, seasonal variations, and changes in disease distribution. Statistical summaries of these data are published monthly in *Texas Preventable Disease News*, a bi-weekly publication of the Bureau of Disease Control and Epidemiology, and distributed throughout the state to local and regional health departments and hospital infection control practitioners, nationally to other state epidemiologists, and upon request to other interested persons. Statistical summaries are also provided monthly to each of the Texas Department of Heath regional offices.

Since 1984, the Epidemiology Division has used a microcomputer surveillance system which allows epidemiologists within the Division immediate and direct access to Texas morbidity data. This system was modified in 1989, and an epidemiologic software package, Epi Info, originally written by the Centers for Disease Control, was installed. Data can be analyzed and disseminated to reporting agents much more quickly and efficiently. The Division also provides assistance to local and regional health departments interested in setting up their own computerized surveillance systems utilizing Epi Info.

Texas participates in CDC's National Electronic Telecommunications System for Surveillance (NETSS). This system allows CDC to collect specific data on individual cases of reportable diseases throughout the United States. Using the NETSS system, morbidity data collected by the Epidemiology Division are transmitted electronically each week to the CDC and updated periodically. These data are further summarized and are published by CDC weekly in *Morbidity and Mortality Weekly Report.*

Other Sources of Data

Data submitted to the Epidemiology Division through the statewide morbidity reporting system are supplemented by other data collection procedures and surveillance activities of the Texas Department of Health. The Statistical Services Division, Bureau of Vital Statistics, provides mortality data on reportable diseases and conditions to the

Epidemiology Division. The Bureau of Laboratories provides results of serologic and bacteriologic testing, virus isolation, and other special laboratory studies. The Bureau of Veterinary Public Health's Zoonosis Control Division reports animal rabies and other zoonotic diseases affecting man, e.g., equine arboviral infections and plague. As necessary, the Epidemiology Division also works closely with the Bureau of HIV and STD Control, the Immunization Division, the Tuberculosis Elimination Division, and the Occupational Safety and Health Division, as well as with other state agencies such as the Texas Air Control Board and the Texas Water Commission, on matters directly related to or associated with reportable diseases and/or special investigations and studies.

Explanatory Notes

This report contains data for the 1991 reporting period which extended from January 1, 1991 through December 31, 1991. Only cases whose dates of onset occurred during the 1991 calendar year and whose resident addresses were in Texas were included. Cases were counted as morbidity in the county in which they resided, even if they became ill or were hospitalized, diagnosed, or exposed in another county or outside Texas or the United States. Individuals who resided outside Texas but who became ill and were hospitalized or diagnosed in Texas were not included in Texas morbidity nor are they referred to in this report. Non-resident cases were referred through an interstate reciprocal notification system to the appropriate State Epidemiologist in the state where they resided. During 1991, the Epidemiology Division referred almost 700 reportable diseases to State Epidemiologists in 29 different states.

All incidence rates in this report are expressed as the number of reported cases of a disease per 100,000 population unless otherwise specified. Incidence rates measure the frequency of the occurrence of new cases of a disease within a defined population during a specified period of time. When comparing rates for different population groups or time periods, keep in mind that there are limitations inherent in population projections, and there are probable variations in the degree of underreporting. Rates based on small frequencies should be interpreted with caution since sampling errors may be large.

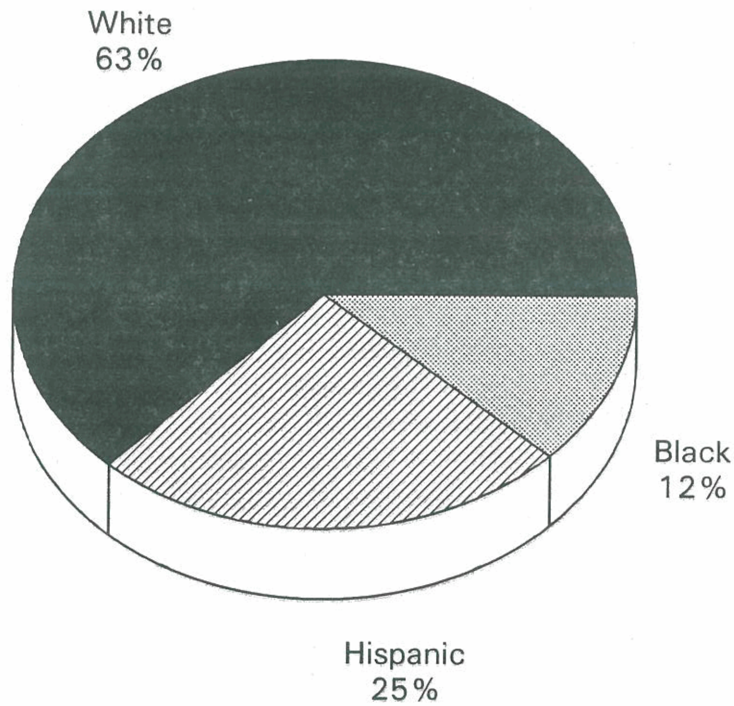
State and county population data used in computing incidence rates were provided by the Bureau of State Health Data and Policy Analysis (BSHDPA), Texas Department of Health. The 1982-1991 population data are population estimates derived from the TDH Population Data System. The population of Texas in 1991 was estimated to be 17,259,688, the majority (55%) of whom lived in only ten counties Bexar, Cameron, Dallas, El Paso, Harris, Hidalgo, Jefferson, Nueces, Tarrant, and Travis. The BSHDPA population data show that the racial/ethnic distribution of the Texas population in 1991 was 63% white, 25% Hispanic, and 12% black as illustrated in Figure 2.

Case-fatality rates (CFR) measure the number of persons who died from a specific disease or cause to the total number of reported cases of that particular disease or condition, i.e., mortality/morbidity. CFRs in this report are expressed as percentages.

The Epidemiology Division has adopted the race/ethnicity definitions provided by the U.S. Department of Commerce and published in the Centers for Disease Control's *Manual of Procedures for National Morbidity & Public Health Activities.* The category which most closely reflects an individual's recognition in his community is used for purposes of reporting persons who are of mixed racial and/or ethnic origins.

Figure 2

Distribution of the Texas Population by Race/ethnicity, 1991



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

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

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

Asian or Pacific Islander: Persons having origins in any of the original peoples of Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands (including China, Japan, India, Korea, the Philippines, and Samoa).

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

SELECTED
1991 SUMMARIES

ASEPTIC MENINGITIS

Aseptic meningitis, also known as viral meningitis, is a common clinical syndrome with multiple viral etiologies; enteroviruses are responsible for most of the cases. Infections are characterized by the sudden onset of fever with signs and symptoms of meningeal involvement, i.e. headache, stiff neck, and sometimes nausea and vomiting. Certain enteroviruses may also produce a rash and/or gastrointestinal or respiratory symptoms. In the early stages of illness, viral agents can be isolated from stool and/or cerebrospinal fluid (CSF), but this is rarely done. Cases are usually diagnosed on clinical symptoms and by the absence of bacteria in CSF.

The incidence of the disease can vary greatly from year to year, and in 1991, Texas experienced a 57% increase in reported cases of aseptic meningitis; 1275 cases were reported in 1991 compared to only 811 in 1990. Only 6% of the cases were actually confirmed by virus isolation; the vast majority (94%) were diagnosed clinically. Enteroviruses were responsible for 92% (69/75) of the confirmed cases, and echovirus 30 was the predominant virus identified in 1991. Sixty-one percent (14/23) of the echovirus 30 infections occurred among children under ten years of age, and 70% of the echovirus 30 specimens were submitted to the Texas Department of Health by the University of Texas Medical Branch in Galveston and were, therefore, counted as Galveston County morbidity.

Enteroviral infections occur more frequently during the warmer months, consequently seasonal peaks of aseptic meningitis are easily detected in the summer. In Texas, 80% of the cases had onset during the period April 1 through September 30, 1991, and over half (53%) occurred May through July as illustrated in Figure 3.

As in previous years, infants under one year of age experienced the greatest age-specific incidence rate for aseptic meningitis in Texas. As illustrated in Figure 4, the 401 cases that occurred in this age group resulted in a rate of 162.8 cases per 100,000 population, the highest rate for any single age group.

Enteroviruses are readily transmitted from person to person in family and child-care settings. Although no day-care outbreaks were reported to the Texas Department of Health in 1991, nine pairs of cases were reported in household settings. These nine incidents included parent and child (4), siblings (4), and a husband and wife (1).

Although aseptic meningitis is not as serious a condition as is bacterial meningitis, nine individuals did die from aseptic meningitis in Texas during 1991; the resulting case-fatality rate was 0.7%. These individuals ranged in age from 10 months to 91 years; median age was 74 years. All of the patients who died were diagnosed clinically with no specific viral agent being identified.

Figure 3

Reported Cases of Aseptic Meningitis
by Month of Onset, Texas, 1991

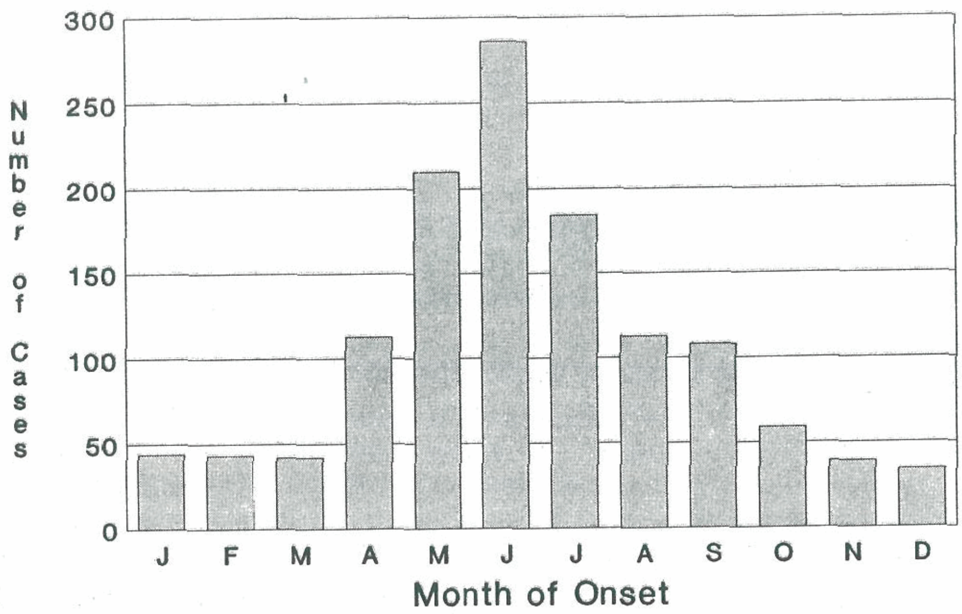
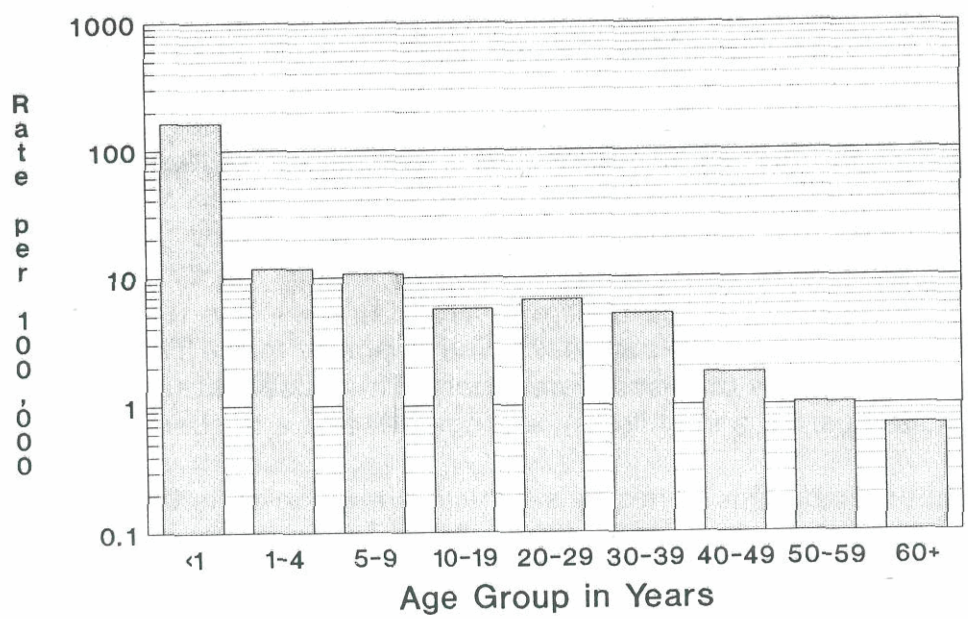


Figure 4

Reported Cases of Aseptic Meningitis
per 100,000 Population, by Age Group, 1991



BOTULISM

Botulism is generally regarded as a food poisoning which results from ingestion of preformed toxin produced by *Clostridium botulinum.* Infant botulism, however, is caused by the production of botulinal toxin in the infant's intestinal tract. The first symptom of infant botulism is usually constipation. Infants then became lethargic and listless and exhibit poor feeding because of diminished suck reflexes; their cries become weak and feeble. When muscle weakness becomes generalized, the baby appears "floppy" with loss of head and extremities control. The severity of the illness varies from moderate to life-threatening.

Clostridium botulinum produces one of seven serologically distinct toxins designated by the letters A-G. Type A and type B organisms are responsible for over 90% of infant botulism cases in the United States. In the United States, type A is usually found in areas west of the Rocky Mountains, but type B is distributed throughout the United States. Spores of *C. botulinum* are widespread in soil and dust throughout the world. Ingestion of honey has been implicated as one source of the infection for infants. Most cases of infant botulism, however, have no history of honey ingestion. Possible sources of spores would include any substance ingested that was contaminated with soil.

Four cases of infant botulism were reported in Texas in 1991. The infants ranged in age from four weeks through 28 weeks. Three infants were males. Two infants were white, one was Hispanic, and the fourth was Asian. Two infants resided in Dallas County, one in Tarrant County, and the fourth in El Paso County. Onsets of illness occurred in February, May, August, and September. None of the children died.

None of the parents reported giving honey to their infants before onset of illness. Possible sources for the *Clostridium* spores included corn syrup and water fed to two infants, a camomile and table sugar tea given to one infant, and an Oriental tea given to another.

Clostridium botulinum type B was recovered from stool specimens of three infants. Type A organisms were recovered from stool specimens of the infant from El Paso County.

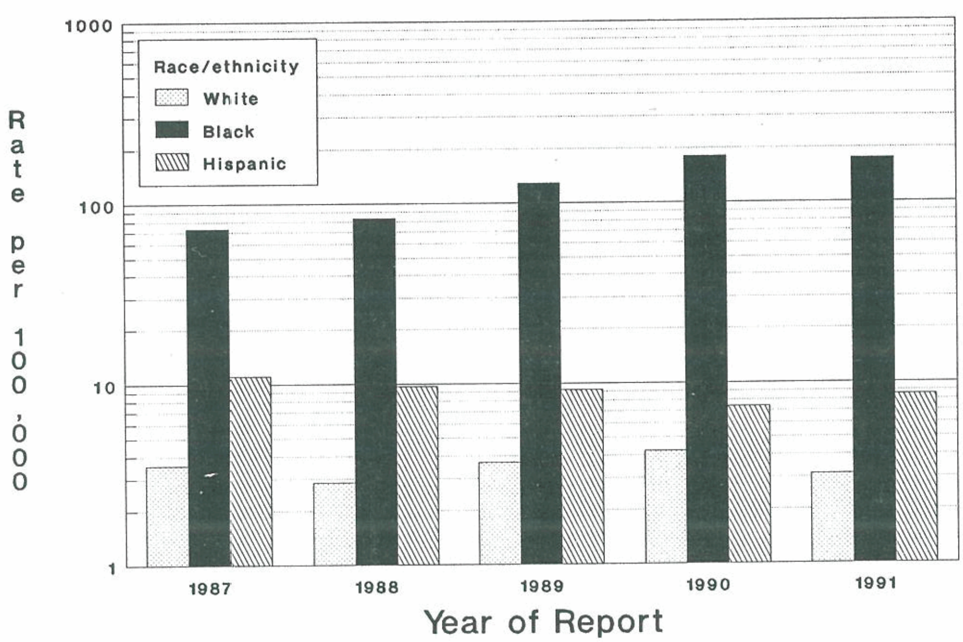
CONGENITAL SYPHILIS

Two hundred sixty (260) cases of suspected congenital syphilis were reported in Texas in 1991, an increase of 23% from the 212 cases reported in 1990. Suspected cases are counted as morbidity because the only definitive test to confirm syphilis is the examination of specimens from skin lesions under a darkfield microscope, but few infants have lesions at birth. Serologic testing for syphilis is also not reliable for infants. Because transmission rates in women with early infectious syphilis (primary and secondary syphilis) are very high (70-100%), cases are often identified and reported as presumptive or suspected on the basis of certain established criteria including the mother's serology and history of treatment. These suspected cases provide the most accurate and useful picture of congenital syphilis morbidity.

Congenital syphilis morbidity for 1991 was the highest in Texas since 1954. The dramatic increase in reported cases began in 1990 when reports of suspected congenital syphilis in Texas doubled reflecting changes in the reporting definition which led to more standardized, accurate surveillance and reporting, as well as a recent rise in the incidence of primary and secondary syphilis among women as illustrated below in Figure 5.

Figure 5

Reported Cases of Primary & Secondary Syphilis in Texas Women by Race/Ethnicity, 1987-1991

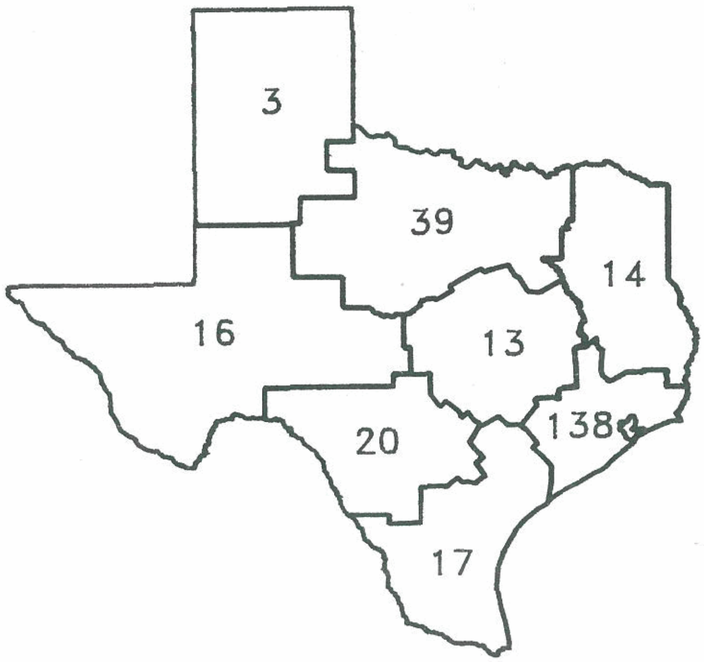


In the past, congenital syphilis was frequently not recognized until signs and symptoms of the disease appeared, sometimes years after birth. Now that Texas law has made syphilis screening mandatory at the time of delivery, most cases are diagnosed at birth or shortly thereafter. In 1991, all 260 cases were infants under one year of age. Treating a newborn for congenital syphilis usually requires at least ten days of hospitalization. The disease can always be cured, but any damage that has already occurred may be permanent. More than 20% of the 260 congenital syphilis reports involved stillbirths or infants who died shortly after birth.

In spite of the fact that over half of the congenital syphilis cases in Texas occurred in Harris County where 134 cases were reported in 1991, Tarrant County experienced the highest rate of increase of any one county. Twenty cases were reported in Tarrant County in 1991 compared to only one case in 1990. Bexar County followed with a 400% increase in reported morbidity; three cases were reported in 1990 compared to 15 cases in 1991. Harris County experienced a 26% increase in morbidity in 1991.

Figure 6

Reported Cases of Congenital Syphilis by Public Health Region in Texas, 1991



Congenital syphilis was reported in every public health region in Texas in 1991 as illustrated in Figure 6, but not all regions experienced increased morbidity. In fact, the morbidity in El Paso County decreased 42% in 1991 as only 15 cases were reported compared to 26 cases in 1990. Dallas County experienced a similar decrease of 44%, from 25 cases in 1990 to 14 cases in 1991. Dallas County, however, will not adopt the new reporting definition until January 1992 making accurate interpretation and comparison of trends throughout the state difficult.

Minority populations bear a disproportionate share of congenital syphilis morbidity. Sixty-five percent (65%) of the cases were black, and 33% were Hispanic. Nationally, more than half of the infants with congenital syphilis are born to women who have received no prenatal care; Texas data show that same pattern. Access to health care, especially prenatal care and STD services, is vitally important in preventing diseases such as congenital syphilis.

ENCEPHALITIS

Encephalitis is an infection of the central nervous system (CNS) that can be caused by a variety of different infectious agents. There are two reporting categories for recording cases of encephalitis in Texas; cases are reported as either primary or post-infectious. Encephalitis caused by arboviruses and herpes simplex virus, for example, are reported as primary encephalitis, but most cases of primary encephalitis are reported on clinical signs and symptoms without laboratory confirmation of a specific etiologic agent. Encephalitis which occurs after a viral infection such as chickenpox, measles, or mumps is reported as post-infectious.

A total of 121 cases of encephalitis were reported in Texas during 1991; all but two of the cases were reported as primary encephalitis. The two post-infectious cases both occurred as the result of chickenpox. Table 1 below lists the various etiologic agents identified during 1991. As previously stated, an etiologic agent was not identified for half of the cases.

Table 1

Etiologic Agent of Encephalitis Reported in Texas, 1991

Etiologic Agent	Number of Cases	Percent of Total
St. Louis encephalitis virus	42	35.5
Herpes simplex	9	7.6
Cytomegalovirus	2	1.6
Amoebae	2	1.6
Tuberculosis	1	0.8
Other	4	3.2
No etiologic agent specified	59	49.6
TOTAL	119	100.0

Only cases of St. Louis encephalitis, amebic meningoencephalitis, and herpesvirus B reported in Texas during 1991 will be further reviewed.

Amebic Meningoencephalitis

Free-living amoebae belonging to the genera *Acanthamoeba* and *Naegleria* are known to cause CNS infections in humans. Almost all CNS infections with these amoebae end in death. *Naegleria fowleri* causes an acute and fulminating infection called primary amebic meningoencephalitis (PAM). Central nervous system infections due to *Acanthamoeba* are referred to as granulomatous amoebic encephalitis (GAE). *Naegleria* infections usually occur in children and young adults with a history of contact with fresh water ponds and lakes. *Acanthamoebae* infections usually occur in immunosuppressed or debilitated persons with no history of contact with water.

Another amoeba belonging to the order *Leptomyxida* has been reported as a cause of meningoencephalitis in humans; *Leptomyxida* amoeba are also free-living amoebae. The duration of illness ranges from 14-240 days; median is 72 days. Risk factors for infection with this amoeba have not been identified.

One case of primary amebic meningoencephalitis was reported in Texas in 1991. The patient, a 27-year-old white male, had a history of swimming in Lake Granbury in Hood County, on July 20, 1991. On July 27, 1991, the patient experienced abrupt onset of a severe headache. He later developed fever and photophobia and complained of myalgias and a stiff neck. The next day he presented to the emergency room of a local hospital and was admitted. On July 29, 1991, he became agitated and experienced a generalized seizure. He became unresponsive to verbal commands and developed increasing respiratory distress. By July 30, 1991, he was unresponsive to auditory and tactile stimuli. He died on July 31, 1991. *Enterococcus faecalis* was cultured from surface swabs of the brain and of the sinuses. Additional studies also found *Naegleria fowleri* in brain tissue.

One case of infection with *Leptomyxida* was also reported in Texas in 1991. The patient was an 11-month-old Hispanic infant from Smith County. In March 1991, she experienced acute onset of strabismus of the left eye. Magnetic resonance imaging revealed a pontine mass diagnosed as a possible astrocytoma. Chemotherapy was begun in April. On April 10, 1991, she was admitted to the hospital for evaluation of left facial palsy and right hemiparesis. Her condition deteriorated, and she died on April 22, 1991. Microscopic examination of her brain showed amoebic trophozoites and occasional cyst forms. Immunofluorescence studies performed at the Centers for Disease Control in Atlanta, Georgia, identified the amoebae as *Leptomyxida*.

Herpesvirus B

Cercopithecine Herpesvirus 1 or B-virus infection occurs naturally among primates of the genus *Macaca*. Monkeys typically experience vesicular lesions in their mouths, therefore, infections usually go unnoticed. The virus is transmitted from monkey to monkey by direct contact, bites, scratches, and contamination of food and water with saliva. Man contracts B-virus infections through monkey bites or skin abrasions contaminated with monkey saliva. Infections have also been reported after handling monkey tissue specimens.

Cercopithecine Herpesvirus 1 infection in man is usually fatal. After an incubation period of 1-3 weeks, the virus causes an ascending encephalomyelitis. The disease is characterized by fever, headache, fatigue, and neurologic manifestations. If the virus was transmitted by a bite or scratch, a vesicular lesion will be present at the wound site. Individuals with close contact to monkeys, such as veterinarians and workers in primate laboratories, are at risk of infection.

In 1991, a fatal case of B-virus infection occurred in Texas. The patient was a 31-year-old male employed at a primate center in South Texas. He experienced onset of illness on October 17, 1991, and initial complaints included fever, headache, back pain, and nausea. The next day an initial diagnosis of a rickettsial infection was made, and appropriate antibiotics were administered. Over the next two days, he remained febrile, developed difficulty swallowing and diplopia, and was admitted to a local hospital. He experienced a cardiac arrest while being transferred to a second hospital. He was pronounced dead on October 30, 1991.

A routine serum specimen collected on September 5, 1991, was negative for antibodies to B-virus by ELISA testing, however, a serum specimen collected on the sixth day of illness was positive. B-virus was detected in brain tissue collected at autopsy.

The patient had not reported any bites from a monkey or contact of non-intact skin with monkey saliva. The route of virus transmission remained unknown. No other primate center employee or hospital employees with body fluid contact developed infections.

St. Louis Encephalitis

Forty-two cases of St. Louis encephalitis (SLE) were reported in Texas in 1991, an 83% increase from the 23 cases reported in 1990; 38 of the cases resided in Harris County. The majority (84%) of Harris County cases resided in Houston, typically in the older neighborhoods of central Houston rather than in the suburbs. One case each resided in Cameron, El Paso, Galveston, and Lynn counties. These four cases reported no travel history outside their counties during the 15 days prior to their onsets.

The cases ranged in age from 15-93 years; median age was 47 years. The majority (62%) of cases were male. The distribution of cases by race/ethnicity was 50% white, 26% Hispanic, and 24% black.

The initial case in Harris County had onset of illness on July 20, 1991. In Harris County, 24 and 13 cases had onset of illness in August and September, respectively. The last case had onset of illness on September 29, 1991. In 1990, the first case of SLE in Harris County also had onset of illness in late July (July 21, 1990), but the last case in 1990 occurred a month later with onset on October 23, 1999. Two of the four cases (El Paso County and Lynn County) outside Harris County had onset of illness the first week of October 1991.

The majority of cases experienced fever (95%), headache (62%), and disorientation (55%). A temperature of 104°F or higher was reported for half of the patients with a fever. Eight cases presented with signs and symptoms of meningitis, whereas 20 cases had a clinical presentation consistent with encephalitis. Ten cases had a clinical presentation of both meningitis and encephalitis. Seven persons, all Harris County residents, died. Four of the deaths were in persons 53 years of age or older.

HAEMOPHILUS INFLUENZAE INFECTIONS

The incidence of *Haemophilus influenzae* infections declined dramatically in Texas during 1991; only 152 cases were reported compared to 625 cases in 1990, a decrease in morbidity of 76%. The drop is explained in part to a change in reporting criteria that the Infectious Diseases Program (IDP) implemented early in 1991, but it is also hoped that the increasing and widespread use of effective Hib vaccines has had a very positive impact and resulted in declining numbers of infants and young children reported with *H. influenzae* infections.

Late in 1990, IDP evaluated the reporting of *H. influenzae* infections because reporting trends had changed so significantly since the disease was added to the list of reportable diseases in 1986. Over the years, increasing numbers of cases were being reported in adults as were the overall number of *H. influenzae* pneumonia infections. This was of particular concern because nontypeable strains of *H. influenzae* are very common in the upper respiratory tract--especially in adults--so common that they are often regarded as normal flora; carriage rates are estimated to be as high as 50-80%. Consequently, a finding of *H. influenzae* in sputum is not helpful in the diagnosis of an invasive *H. influenzae* infection. This evaluation led the IDP to adopt the Council of State and Territorial Epidemiologist's (CSTE) classification for reporting *H. influenzae* infections beginning with the 1991 reporting year, and reporting agents throughout the state were notified in January 1991 of this change. The CSTE recommends the following case classifications for invasive *H. influenzae* infections and have published these in their publication, "Case Definitions for Public Health Surveillance," a special supplement to *Morbidity and Mortality Weekly Report*, October 19, 1990:

Confirmed Case: A clinically compatible illness that is culture confirmed, i.e., isolation of *H. influenzae* from a normally sterile site.

Probable Case: A clinically compatible illness with detection of *H. influenzae* type b antigen in cerebrospinal fluid.

Of the 152 *H. influenzae* infections reported in Texas in 1991, 68% were reported as meningitis (with or without bacteremia), and 24% were reported as septicemia (bacteremia) alone; 5% of the cases had epiglottitis, 3% had cellulitis, and one case (0.7%) was reported with septic arthritis. Only six deaths due to *H. influenzae* infections were known to have occurred in 1991 for a case-fatality rate of 4%.

Exactly one-half of the *H. influenzae* infections reported in 1991 were infants under one year of age, and 82% of the cases under five years of age.

Case investigation forms were submitted to the IDP on 64% (97/152) of the cases in 1991, however, because of the large number of data items left blank on many forms, information was incomplete for quite a few variables. Information as to antibiotic sensitivity was provided on only 49% (48/97) of the forms, and 44% of the organisms were resistant to ampicillin. Nine children who were diagnosed with an invasive *H. influenzae* infection in 1991 had received at least one dose of Hib vaccine; two children had received two doses of vaccine. The length of time between the last dose of vaccine and onset of symptoms ranged from six days to one year. This later incident, however, involved a child who had received only one dose of Hib vaccine at three months of age. The two children who had each received two doses of vaccine, both became ill six days following receipt of their last dose. One child was eight months of age and was diagnosed with *H. influenzae* cellulitis; the other child was a five-month-old and developed a bacteremia and bilateral otitis media. Both of these children had blood cultures positive for *H. influenzae* type b.

Three *Haemophilus influenzae* vaccines are currently licensed for administration to children in the United States. Two of the three vaccines are licensed for use in children as young as two months of age, and one is licensed for use in children 15 months of age and older. The Texas Department of Health's suggested schedule for routine immunizations which was revised in 1991 recommends *H. influenzae* type b conjugate vaccine (HibCV) to all infants at 2, 4, 6, and 15 months of age.

HANSEN'S DISEASE

Hansen's disease is a mildly communicable disease which effects the skin, mucus membranes, peripheral nerves, eyes, and testes. It is transmitted primarily by the respiratory route as is tuberculosis. There are epidemiologic and animal data to support this view though it remains unproven.

Mycobacterium leprae is one of the slowest growing bacteria with division occurring only about every 12-13 days, which in part, accounts for the typical 3-5 year incubation period. About 5% of the armadillos in Louisiana and Texas are known to be infected with *Mycobacterium leprae*, and contact with them may occasionally cause transmission. The bacillus may also exist free in nature. Texas is one of only five states in the United States where HD is endemic; the other four states are California, Louisiana, Florida and Hawaii.

Although there is only one organism that causes Hansen's disease, the type (or spectrum) of disease that develops in a susceptible individual depends upon the response of the individual's immune system to the invading bacteria. The Ridley-Joplin classification of Hansen's disease which divides the disease into five spectra, has been widely used but is being replaced by the World Health Organization (WHO) classification which consists of paucibacillary disease (PB) and multibacillary disease (MB). The WHO classification simplifies treatment regimens in countries where the disease is endemic. Cases are identified by clinical findings and skin smear results. A case is considered PB if skin smears are negative for acid fast bacilla (AFB) and MB if skin smears reveal AFB at any site.

Table 2 provides information on the current HD drug regimens. Current treatment for HD for PB (indeterminate, tuberculoid, and borderline tuberculoid) in the United States varies from six months to three years of daily therapy with Dapsone 100 mg and Rifampin 600 mg followed by Dapsone 100 mg daily from 3-5 years depending on the spectra of the disease. The recommendations for MB disease (midborderline, borderline-leptomatous, and leptomatous) is Dapsone 100 mg daily plus rifampin 600 mg daily for three years, followed by Dapsone monotherapy for ten years (midborderline) or life (borderline and leptomatous). Clofazimine (50 mg daily) should be added if any uncertainty exist as to whether the patient's bacilli are fully sulfone sensitive. Certain clinics in Texas are utilizing a short course therapy protocol under the Food and Drug Administration approval of the Gillis W. Long Hansen's Disease Center (GWLHDC) in Carville, Louisiana. If these trials are successful, the shortened therapy regimens will eventually become standard in the United States.

Over the last twenty years, diagnosis and treatment of HD have shifted from isolation and inpatient care at the GWLHDC in Carville to integration of care through public and private physicians in communities where clients reside. Currently there are clinic sites in Brownsville, Dallas, Fort Worth, Houston, McAllen, San Antonio, and Victoria.

Table 2

Current Hansen's Disease Drug Regimens

Type of Disease	World Health Regimen	United States Current Regimen	United States Investigational Regimen
Paucibacillary	Dapsone 100 mg daily, unsupervised, plus rifampin 600 mg once monthly, supervised for 6 months.	Dapsone 100 mg daily plus rifampin 600 mg daily for 6 months, followed by dapsone monotherapy for 3 years (indeterminate and TT) or 5 years (BT).	Dapsone 100 mg daily plus rifampin 600 mg (monthly or daily). Both continued for 1 year in the initial group of patients and 6 months in a subsequent series of patients.
Multibacillary	Dapsone 100 mg daily plus clofazimine 50 mg daily, unsupervised, with rifampin 600 mg once monthly, supervised; this regimen should be continued for at least 2 years, and preferable until the skin smears are negative.	Dapsone 100 mg daily plus rifampin 600 mg daily for 3 years, followed by dapsone monotherapy for 10 years (BB) or life (BL and LL). Clofazimine (50 mg daily) should be added if any uncertainty exists as to whether the patient's bacilli are fully sulfone sensitive. Dapsone-resistant: Clofazimine 50 mg daily plus rifampin 600 mg daily for 3 years, followed by clofazimine monotherapy indefinitely, or rifampin plus ethionamide (250 mg daily) indefinitely if the patient will not take clofazimine.	I. The standard WHO MB regimen for 2 years. II. The standard WHO MB regimen for 2 years, giving the rifampin daily instead of monthly, and without the monthly dose of clofazimine. III. Dapsone 100 mg daily plus rifampin 600 mg daily for 2 years. This regimen is completed only if the patient's *M. leprae* are proven to be fully dapsone sensitive in a mouse footpad study. Patients whose bacilli demonstrate any level of dapsone resistance or whose mouse footpad study fails are switched to I. or II. above.

TT = tuberculoid (Ridley-Joplin)
BT = borderline tuberculoid
BB = midborderline
BL = borderline-lepromatous
LL = lepromatous

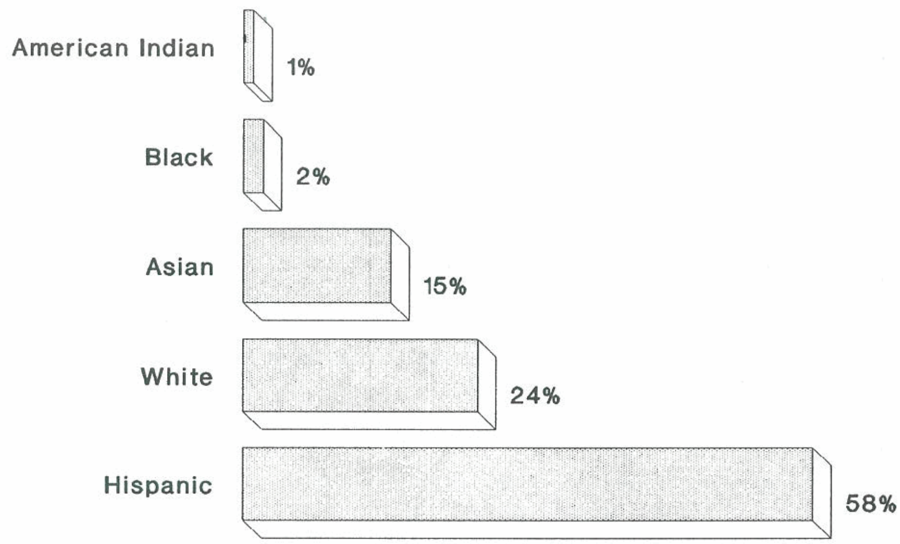
These clinics provide care to HD clients and suspect cases, as well as to their contacts. An additional 249 private physicians in Texas also provide care to one or more HD clients.

National Ambulatory Hansen's Disease Centers (NAHDC) have been established in HD endemic areas of the United States through federal cost reimbursement contracts with the Department of Health and Human Services in Rockville, Maryland. Funding is administered through the NAHDC in Carville, Louisiana. The purpose of these centers is to identify, treat, and monitor clients in their home communities. The Texas Department of Health has been designated as one of these centers since 1984.

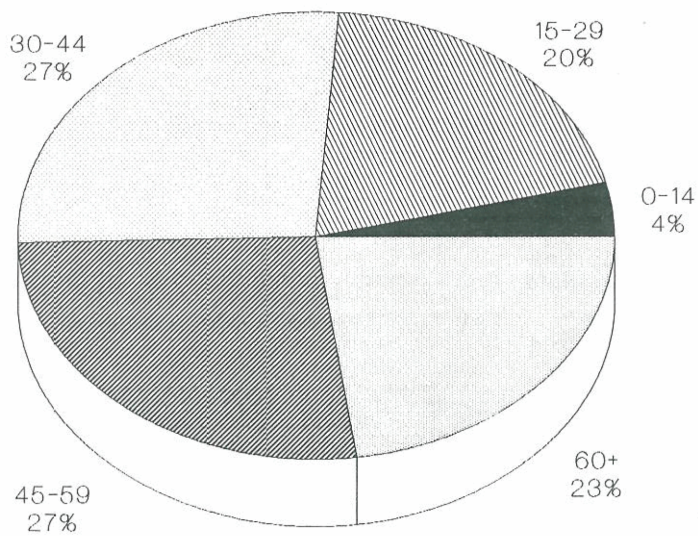
In the past five years, Texas has averaged 33 cases of HD a year, and in 1991, 38 cases were reported. By the close of 1991, the TDH Hansen's Disease Program was providing follow-up health care to over 400 HD patients. Fifty-four percent of HD cases reported in Texas were born in the United States, 60% were males, and as illustrated in Figure 7, 58% were Hispanic. The age distribution of HD patients in Texas is fairly evenly distributed among age groups for individuals over 15 years of age indicating that HD must be suspected in all age groups. Eighty-one percent of cases reported in Texas live in Public Health Regions 4, 5, and 8 (Figure 8), and approximately 73% were diagnosed with multibacillary disease (Figure 9).

Figure 7

Distribution of Hansen's Disease Patients in Texas by Race/ethnicity and Age at Diagnosis



Ethnic Background



Age (in Years) at Diagnosis

Figure 8

Distribution of Hansen's Disease Patients in Texas
By Public Health Region

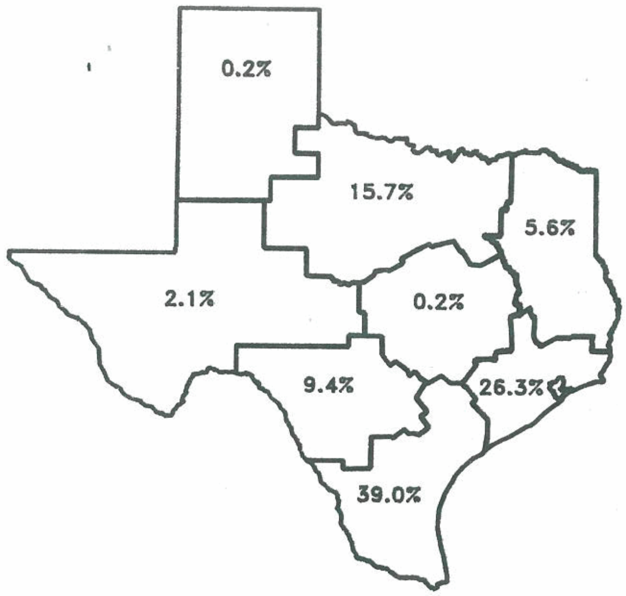
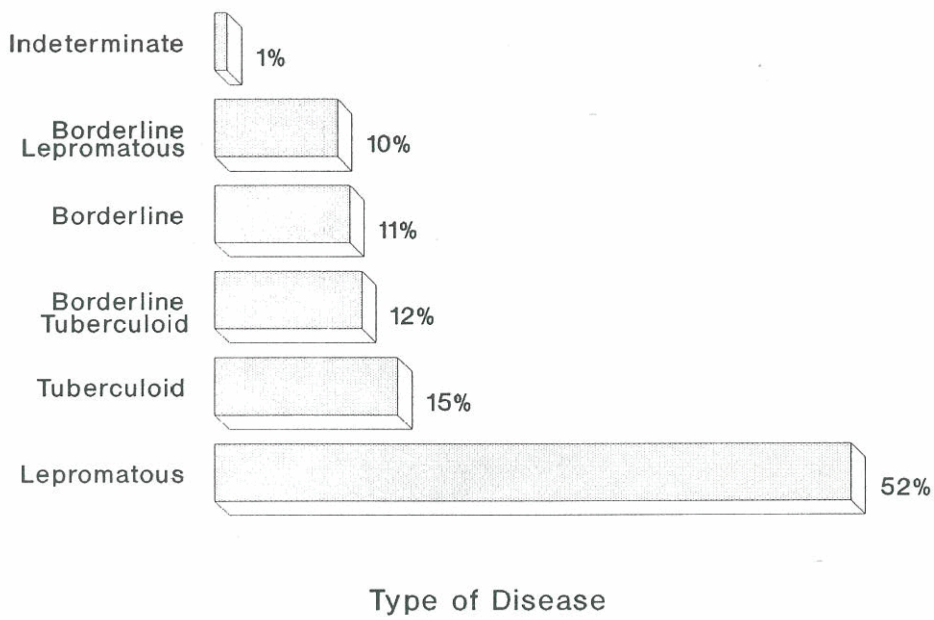


Figure 9

Distribution of Hansen's Disease Patients in Texas
By Type of Disease



HIV/AIDS

Acquired immunodeficiency syndrome (AIDS) is a specific group of diseases or conditions which indicate severe immunosuppression related to infection with the human immunodeficiency virus (HIV). Unlike many other reportable diseases discussed in this report, the clinical manifestations of HIV do not usually develop until years after infection. The average time between infection with HIV and a diagnosis of AIDS is 10-12 years. This lengthy period between infection and development of clinical illness limits the value of statistics based on AIDS cases reported in a given period of time. Reported AIDS cases do not represent new HIV infections but reflect infections which had been clinically silent. As with all reportable diseases, there is usually some delay between the date of diagnosis and the date the case is reported to public health officials, but with AIDS, this delay can extend over years. Developing an epidemiologic profile based on AIDS statistics by the year of report can lead to mistaken conclusions.

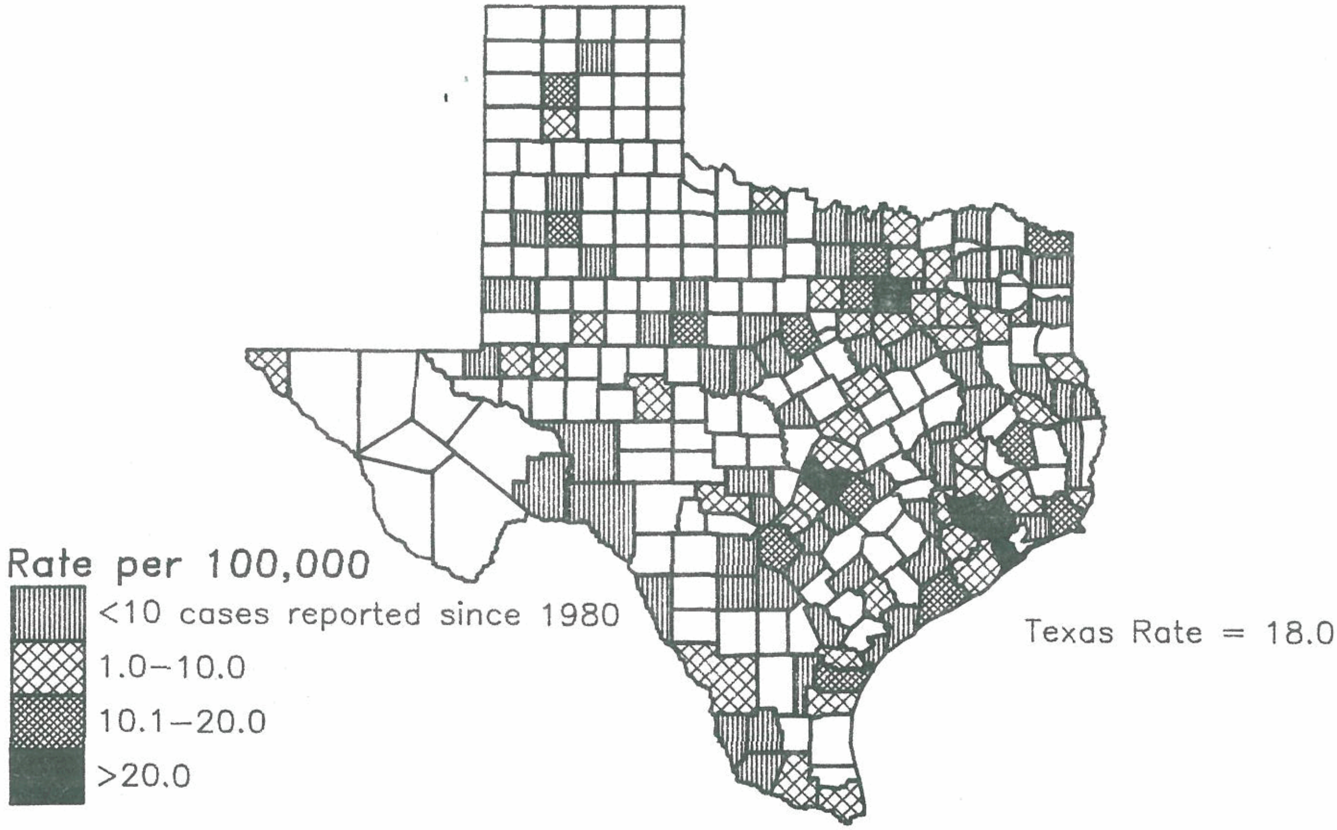
Examining the distribution of cases by their year of diagnosis illustrates that cases reported in a given year may be very different from those diagnosed in that same year. In 1991, only 60% of the cases reported were actually diagnosed in 1991; 30% were diagnosed in 1990, and 10% were diagnosed prior to 1990, some were diagnosed as far back as 1983. Reporting delays can be associated with the inherent delays in making the diagnosis, a reliance on passive reporting, and, perhaps even the fear that patients will be discriminated against or may lose their insurance benefits if the case is reported. Reporting delays may also be increased by a lack of awareness that timely reporting of AIDS cases is both important and required by law.

The 3,100 AIDS cases reported to the Texas Department of Health in 1991 resulted in an incidence rate of 18 cases per 100,000 population in 1991. A total of 116 Texas counties reported cases in 1991. Dallas and Harris counties combined accounted for 59% of the cases, reporting 713 and 1120 cases, respectively. Bexar, Tarrant, and Travis counties each reported approximately 200 cases and together accounted for an additional 19% of the cases. It is also interesting to note that 58% of the counties reporting cases in 1991 were classified as rural counties according to the United States Census Bureau. Texas ranks fourth in the United States in the number of reported cases and would rank seventh in the nation even if the Dallas and Harris county cases were excluded. Figure 10 illustrates the incidence rate of AIDS by county in Texas.

AIDS is still reported primarily among men 20-50 years of age. Ninety-four percent of the AIDS cases reported in 1991 were men; 5% of the cases were women, and 1% were children. Considering the average latency period of ten years between infection and diagnosis, it is likely that half of the cases reported in 1991 were infected prior to 1981. Because of the long latency period, we cannot assume that the characteristics of current AIDS cases reflect that of the population recently

Figure 10

Reported Cases of AIDS per 100,000 Population
by County of Residence, Texas, 1991

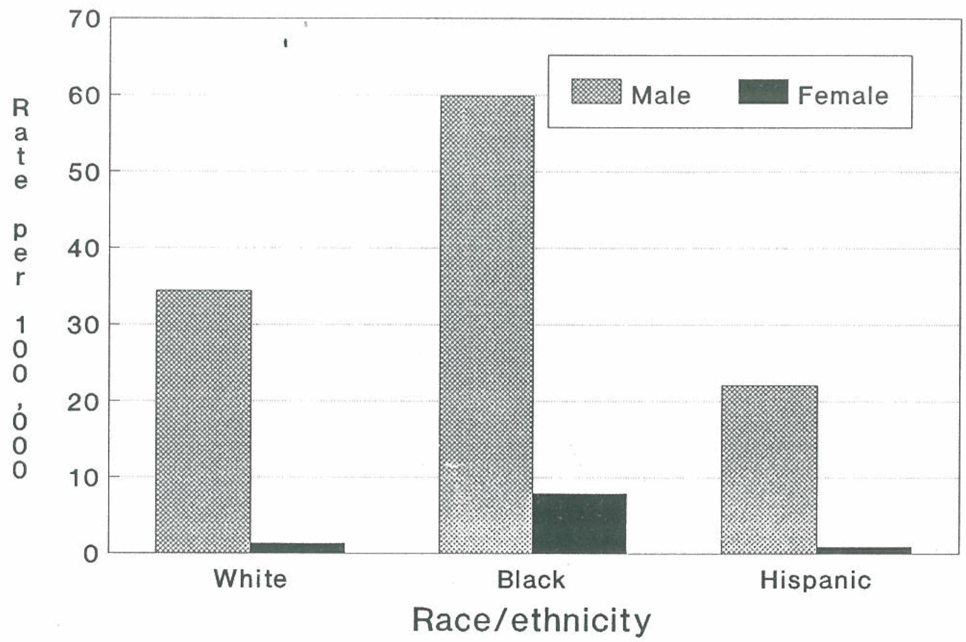


infected. Those individuals most recently infected with HIV are the ones most likely to develop AIDS in the next 10-15 years.

Although AIDS undoubtedly is still regarded by many people as a condition primarily affecting whites, this is changing rapidly. Even though 61% of the newly diagnosed AIDS cases were white, morbidity among whites increased only 11% between 1989 and 1991. Blacks, however, experienced a 47% increase and Hispanics a 21% increase. This trend of increasing morbidity among minorities began in the late 1980s and has been observed throughout the United States. Twenty-two percent of the Texas cases in 1991 were black, and 16% were Hispanic. The incidence rate of AIDS among blacks was dramatically higher in 1991 than among whites or Hispanics; this was true both for males and females as illustrated in Figure 11. The increased incidence rate of AIDS among blacks in 1991 clearly reinforced the impression that AIDS/HIV is a significant problem among blacks in Texas.

Figure 11

Reported Cases of AIDS per 100,000 Population
by Race/ethnicity and Sex, Texas, 1991



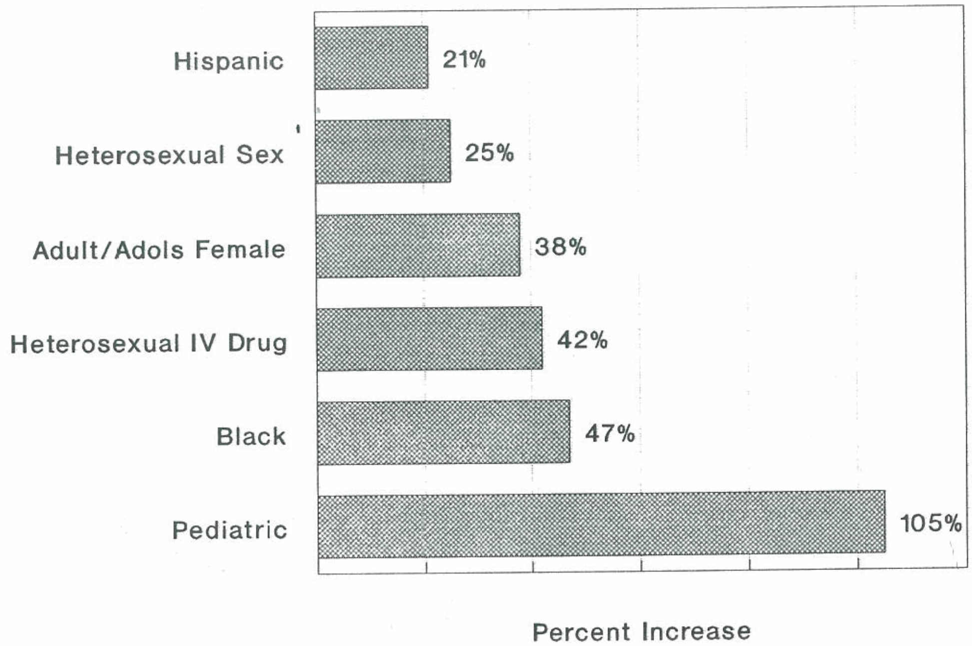
Between 1989 and 1991, there were also changes in the distribution of mode of exposure to HIV among AIDS cases. Although the proportion of adolescent and adult cases exposed to HIV through male-to-male sex has decreased--71% in 1989 compared with 66% in 1991, the percentage of cases infected through injecting drugs (ID) increased. Exposure from transfusions of blood and blood products used to control hemophilia also decreased from 4% to only 1%. From trends observed in Texas over the last several years, it was expected that the proportion of heterosexual cases would increase, but this was not the case between 1989 and 1991. Heterosexual exposures remained at 3%.

The changes in the epidemic described thus far are important to understanding the overall composition of reported AIDS cases, but they do not indicate the absolute increase in numbers of cases in many of the categories of mode of exposure and racial/ethnic groups. As illustrated in Figure 12, the number of pediatric AIDS cases doubled; 21 cases were reported in 1989 compared with 43 cases in 1991.

During the same period, the number of AIDS cases attributed to heterosexual exposure increased 25% between 1989 and 1991, whereas the number of cases exposed through ID use and among adult and adolescent women increased by 42%

Figure 12

Increase in AIDS Cases by Reporting Category
Texas, 1989-1991



and 38%, respectively. Overall, the number of AIDS cases in Texas increased from 2,605 cases reported in 1989 to 3,100 reported in 1991. This represented a 60% increase in two years and suggests that AIDS will continue to remain a significant health problem throughout the 1990s.

HUMAN RABIES

For the second straight year, a case of human rabies was confirmed in Texas; this case occurred in August 1991 in Starr County, in the lower Rio Grande Valley. Between August 7-9, a 55-year-old Hispanic female developed nervousness, shortness of breath, and difficulty swallowing. On August 9, she was admitted to a local hospital and diagnosed with a panic disorder. On August 12, rabies was considered in the differential diagnosis because the patient was experiencing aerophobia, hydrophobia, agitation, and incoherence, alternating with periods of calm and cooperative behavior. A skin biopsy, saliva, serum, and cerebrospinal fluid (CSF) specimens were collected. The patient then developed ascending paresis and on August 16, she was transferred to another hospital for a CAT scan of the head. After the scan, she had a respiratory arrest that progressed to cardiac arrest; she was resuscitated but did not regain consciousness and died on August 20.

Rabies virus was detected by the Centers for Disease Control in cell culture of the saliva specimen. The serum and CSF specimens obtained on August 12 were, however, negative for rabies antibody, and the skin biopsy was negative for rabies by the direct immunofluorescent antibody (DFA) test. Monoclonal antibody typing showed the rabies virus isolated (from the saliva) to be identical to the virus strain found in dogs in Mexico and along the border of Mexico and Texas. A second skin biopsy from the nape of the neck, obtained on August 19, was positive by DFA.

The woman had no known exposure to rabies. She was a native of Texas and had resided in Starr County her entire life. Even though rabies is endemic in dogs and coyotes in Starr County, the woman had no known animal bites. Several animals whose behavior was suggestive of rabies were seen on the family ranch in the months preceding this woman's illness. Because of possible exposure to this patient, 43 persons received postexposure prophylaxis including 37 hospital personnel and six members of the patient's household.

The first case of human rabies in Texas since 1985 occurred in Hidalgo County in June 1990. Monoclonal antibody typing of the virus proved the case was caused by the Mexican free-tailed bat strain.

INFLUENZA AND FLU-LIKE ILLNESS

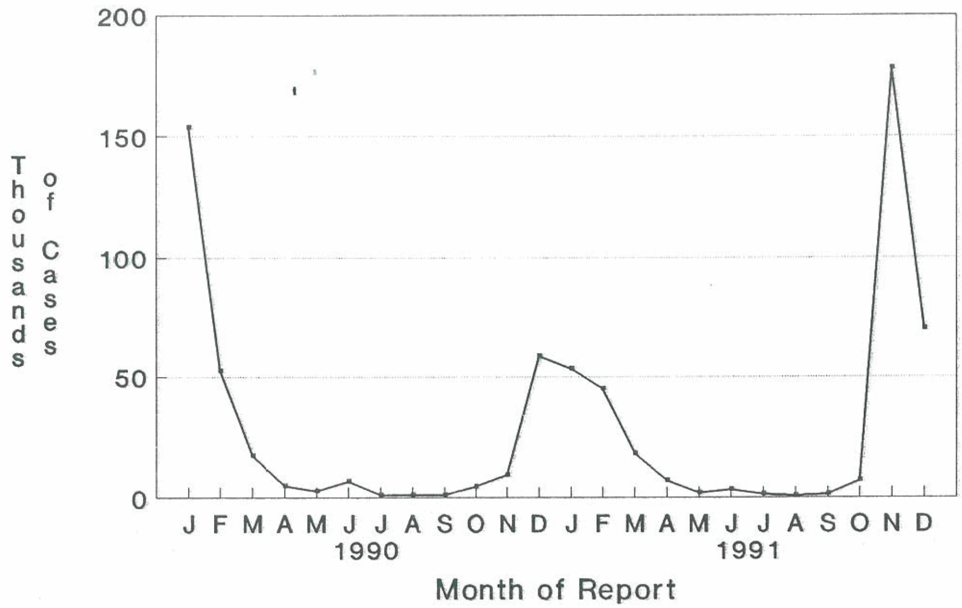
Reports of influenza and other upper respiratory illnesses with clinical syndromes similar to influenza are recorded in the statewide morbidity reporting system as "influenza and flu-like illness." Cases are reported by case totals only, and in most instances reflect diagnoses based solely on initial clinical impression. The typical syndrome associated with illnesses in this reporting category includes fever, malaise, chills, sore throat, myalgias, cough, and coryza, but the severity of illness can vary considerably depending on the specific etiologic agent involved and factors such as the patient's age or previous immunity.

Viral respiratory diseases dominate this reporting category with illness due to influenza viruses, adenoviruses, respiratory syncytial virus, and parainfluenza viruses comprising the majority of morbidity throughout the year. Infections caused by other etiologic agents, such as *Mycoplasma* species, may also be reported in this category. Many viruses circulate only during specific times of the year resulting in reasonably predictable patterns of incidence. Influenza viruses, parainfluenza viruses, and respiratory syncytial virus all have distinct seasons which often overlap to some extent.

In 1991, there were 386,911 cases of influenza and flu-like illness reported from 89 counties in Texas, an increase in morbidity of 23% over the cases reported in 1990. Figure 13 shows the distribution of cases by month of report for 1990-91. Two years

Figure 13

Reported Cases of Influenza & Flu-like Illness
by Month of Report, 1990-1991



of morbidity data are provided to illustrate the seasonal occurrence of influenza which normally begins in the late fall and extends on in to the next year.

As in previous years, influenza reporting for Harris County was based on a system whereby virus isolates were used to measure the incidence of influenza within the community. Harris County, therefore, accounted for the majority (80%) of Texas' influenza cases. Medical epidemiologists at the Influenza Research Center in Houston have estimated that each influenza virus isolated actually represents 500 cases in the community. Since influenza is so underreported, this system, developed from extensive community-wide surveillance, was thought to provide a more accurate estimation of influenza morbidity. This reporting system was used in the Houston area only.

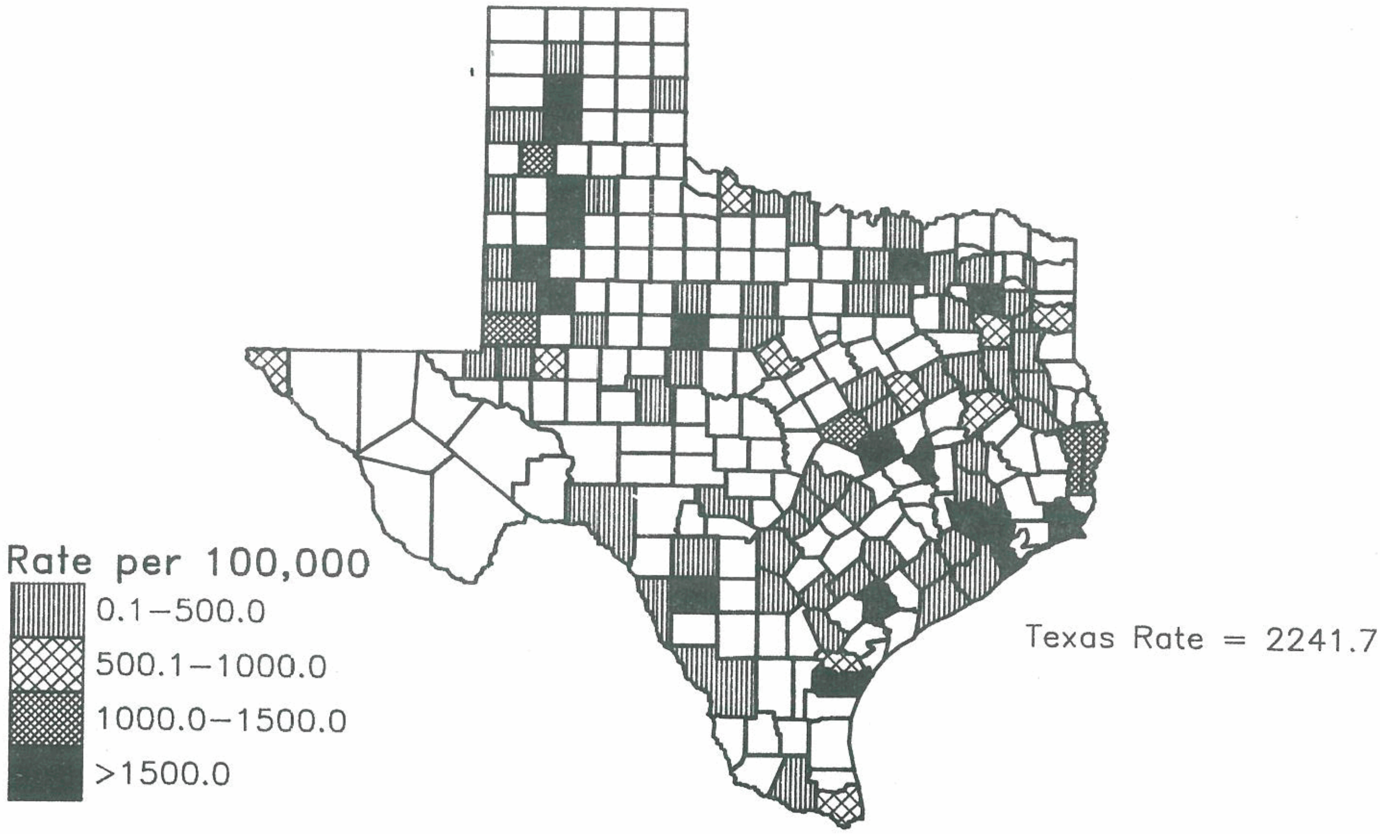
Figure 14 depicts the geographical distribution of flu-like disease throughout Texas in 1991. It is important to note that counties left blank most likely reflect a lack of reporting rather than a true absence of influenza morbidity.

Influenza Virus Surveillance

There are three types of influenza viruses: A, B, and C. Every year significant levels of influenza morbidity are attributed to influenza A and/or influenza B viruses; influenza C infections, however, are usually subclinical and difficult to monitor.

Figure 14

Reported Cases of Influenza & Flu-like Illness
per 100,000 Population, by County of Residence, Texas, 1991



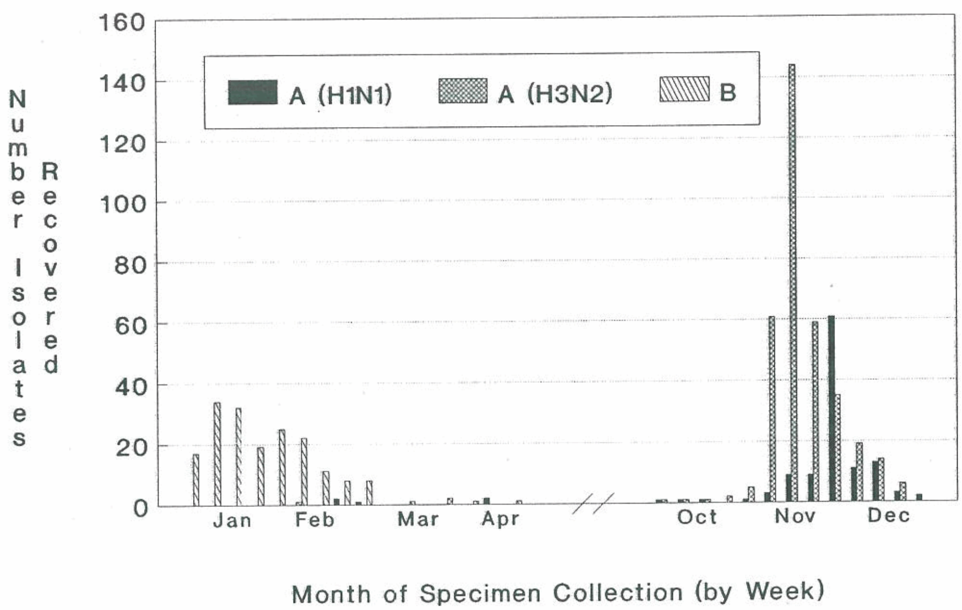
Influenza viruses have the ability to change the antigenic properties of key viral proteins, often in response to increasing levels of immunity within a population. Minor changes in viral antigens are known as antigenic drift, and abrupt, significant changes are called antigenic shift. With influenza A viruses, changes in the antigenic properties can occur over a relatively short period of time and contribute to a variety of subtypes. Influenza B viruses, on the other hand, change much more slowly.

Influenza virus isolation represents the definitive procedure for laboratory identification of influenza. In Texas, the two major sources for influenza virus isolate information are the Medical Virology Section within the Bureau of Laboratories, Texas Department of Health (TDH), and the Influenza Research Center at Baylor College of Medicine in Houston. Virus surveillance helps to define the beginning and end of the influenza season and unequivocally identifies the viruses associated with local morbidity. Regional variations in the flu season are not uncommon in Texas.

There were two influenza seasons within one calendar year in Texas making 1991 unique. The 1990-91 flu season was fairly typical because the majority of reported illnesses and virus isolates occurred during the winter months. The season began in December 1990 and ended by March 1991; peak activity was reported in January and February 1991. The 1991-92 season, however, was definitely atypical. Not only did the season begin extremely early, but the season peaked in November, and virus activity declined rapidly thereafter. This extraordinary situation resulted in a total of 991 influenza virus isolates being reported from 25 counties in Texas for the 1991 calendar year. Cities with TDH-coordinated programs for virus surveillance included Austin, Lubbock, and Dallas. Houston and San Antonio conducted independent influenza surveillance. Virus isolates were also obtained from Amarillo, El Paso, Laredo, Corpus Christi, Galveston, Sherman, and Fort Worth, as well as from Ector County. Figures 15 and 16 show the distribution of influenza virus isolates by week of collection for the Houston area and for the remainder of the state, respectively.

Figure 15

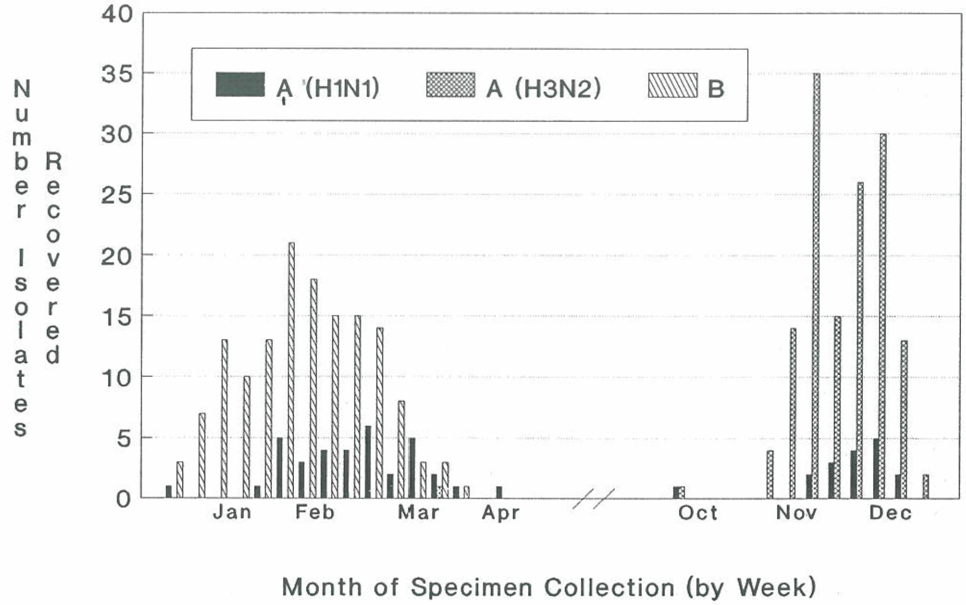
Influenza Virus Isolates Recovered by the Influenza Research Center by Week of Specimen Collection, Houston, 1991



The major influenza virus in circulation during the latter half of the 1990-91 season was influenza B/Yamagata/16/88, but regional variations in virus activity were evident from the onset of the season. Houston reported substantial influenza B activity, especially in children, during the winter months of 1990, whereas there was little or

Figure 16

Influenza Virus Isolates Recovered by the Texas Department of Health by Week of Specimen Collection, 1991



no such activity in Austin. Early in 1991, influenza B virus activity became apparent statewide, and the season came to a close by March. Interestingly, Austin-based surveillance identified influenza A/Taiwan/1/86 (H1N1) virus co-circulating at low levels with influenza B in February, March, and part of April 1991. The Houston area reported little or no influenza A (H1N1) activity during this same time period.

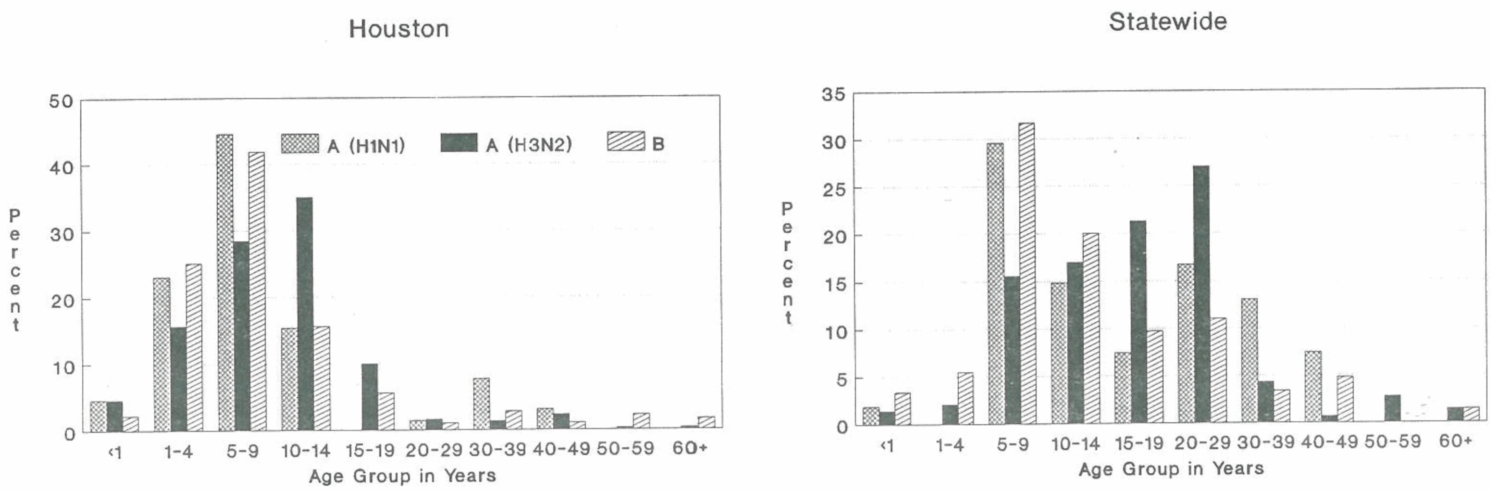
As mentioned earlier, the 1991-92 flu season was extraordinary by all accounts. The season got off to an extremely early start when the an influenza A (H1N1) virus was identified in Hays County on September 19, 1991. Influenza A (H1N1) virus activity continued at low levels statewide and peaked in early-to-mid December, especially in Houston. During the four-month period (September to December), the H1N1 strain began to show moderate antigenic heterogeneity resulting in at least two distinct H1N1 viruses identified in Texas. Although influenza A/Taiwan/1/86 (H1N1) remained the principle H1N1 virus, an influenza A/Yamagata/32/89 (H1N1)-like virus was identified in the Austin area, as well as in Houston. The CDC designated this virus as influenza A/Texas/36/91 (H1N1), based on its apparent antigenic heterogeneity compared to H1N1 strains previously in circulation. This strain has been selected as the H1N1 component for the influenza vaccine for the 1992-93 season.

The major virus in circulation for the 1991-92 season was influenza A/Beijing/353/89 (H3N2), and its activity was detected statewide primarily during November and December 1991. This virus was responsible for a large outbreak of viral upper respiratory illness among middle- and high school students in the Houston/Galveston area during November. Morbidity attributed to this outbreak is reflected in Figure 17, which shows the age distribution of influenza patients. In the Houston area, children 5-9 years of age and 10-14 years of age were affected most by H3N2 infection during the season, whereas in the Austin area, teenagers and young adults (15-19 and 20-29 age groups) were the ones most affected.

During the 1990-91 influenza B season, morbidity centered in children age 5-9 years of age throughout the state. In Houston, approximately 85% of the influenza virus isolates were recovered from patients under 15 years of age. In Austin and elsewhere in Texas, influenza morbidity was less focused in the pediatric population. Possible factors contributing to this situation may have been the nature of the collection sources (pediatric versus general practice) and the sample size for analysis; isolates reported from the TDH laboratory accounted for approximately one-third of the total number of influenza virus isolates reported from Texas.

Figure 17

Age Distribution of Patients with Confirmed Influenza Houston and TDH Surveillance Compared, 1991



LISTERIOSIS

Listeriosis is a bacterial disease that occurs more commonly among neonates, pregnant women, the elderly, and the immunocompromised. Infections can range from a mild febrile illness with flu-like symptoms to acute meningoencephalitis and/or septicemia. An asymptomatic pregnant woman can transfer the infection to her fetus, and the infant can be stillborn, born with septicemia, or develop meningitis during the neonatal period.

During 1991, 52 cases of listeriosis were reported in Texas, a 61% increase over 1990 statewide morbidity. The majority of the patients resided in the following six counties: Harris (16 cases), Bexar (5), Tarrant (4), Galveston (3), Dallas (2), and Cooke (2). The remaining cases were scattered throughout twenty other counties in the state.

In 1989 and in 1990, infants accounted for 8% and 10% of the listeriosis cases reported in Texas, respectively, but in 1991, 31% (16/52) of the cases were infants under one year of age. The infants resided in eight different counties, although the majority of cases (56%) occurred in Harris County. During the period January through March 1991, the Houston Department of Health & Human Services noticed an overall increase in the number of reported cases of listeriosis when five infants and one adult were reported during this three-month period. During the same period in both 1989 and 1990, only one case had been reported in Harris County, and both cases were adults. The local health department investigated this finding, but no common source of exposure could be identified for these six cases. Two different serotypes of *Listeria monocytogenes* were identified, 4b and 12b. Four of the infant cases that occurred during this time period developed meningitis; three had *L. monocytogenes* cultured from spinal fluid. Sixty percent of the infants were males. Race was known for 15 of the 16 cases reported; six (40%) were Hispanic, 5 (33%) were black, and 4 (27%) were white.

Only three other cases of listeriosis were reported in children in 1991; these children were 1, 2, and 10 years of age. No deaths in infants or children were attributed to listeriosis in 1991.

Adults accounted for 63% (33 cases) of listeriosis cases reported in Texas. The adults ranged in age from 23 to 86 years of age. The majority (52%) of the cases were females. Race was known for 29 of the cases. Twenty one cases (72%) were white, 3 (10%) were Hispanic, and 5 (17%) were black. Nine of the adult cases died for a case fatality rate in adults of 27%. Five of the nine cases that died were males. The deaths ranged from 27-74 years of age. Seven (78%) of the deaths were white, one Hispanic and one black. An underlying disease was known for six of the nine cases that died. Four of the cases had a history of cancer, one had HIV infection, and one had a history of renal transplant and diabetes mellitus.

LYME BORRELIOSIS

Lyme borreliosis is a multisystemic disease caused by a spirochete, *Borrelia burgdorferi*. The spirochete is transmitted to humans by the bite of an infected tick. The early or acute phase of the disease is characterized by fever, malaise, fatigue, and an annular skin lesion, erythema migrans (EM). This lesion starts as an erythematous non-pruritic macule or papule and extends to form an expanding red ring with central clearing. Usually, the initial lesion disappears in 3-8 weeks, and in the absence of antibiotic therapy, a late or chronic phase of the disease occurs weeks or months after the acute phase.

The late or disseminated phase consists of cardiac, neurologic, or rheumatologic abnormalities. Ten to 20% of patients experience one or more neurologic symptoms including cranial neuropathy (commonly Bell's palsy), peripheral radiculopathy, or meningitis. Up to 10% of patients experience cardiac abnormalities including tachycardia, bradycardia, or varying degrees of atrioventricular block. These abnormalities may last for days or weeks.

The usual rheumatologic abnormality is episodic arthritis affecting the elbows, shoulders, hips, ankles, and primarily the knee. Many patients have migratory polyarthralgias without swelling of the joints early in the disease. Doxycycline or amoxicillin are effective in alleviating the symptoms of the early phase and help prevent the abnormalities of the late of disseminated phase.

In humans, *B. burgdorferi* has been isolated from blood, skin lesions, and cerebrospinal fluid. *B. burgdorferi* is transmitted to humans by the bite of an infected tick. Horse flies, deer flies, and fleas may also play a role in transmission. Maternal-fetal transmission has also been reported.

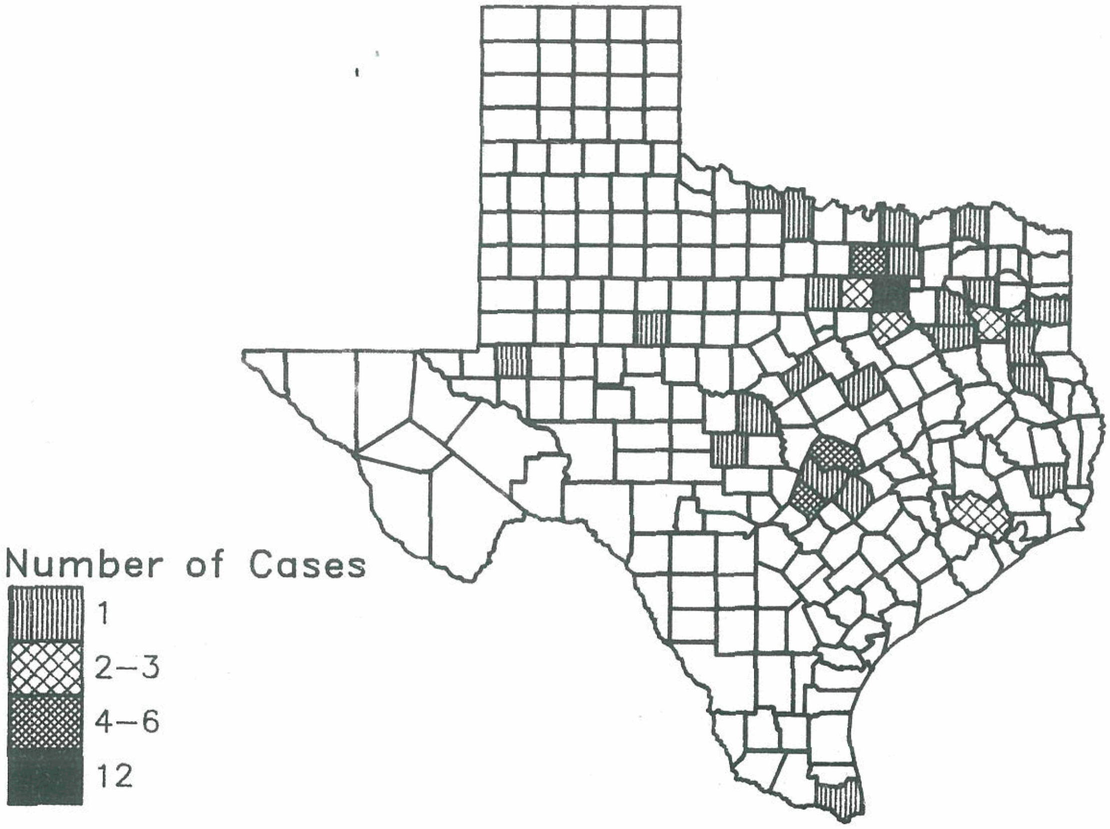
B. burgdorferi has been isolated from *Amblyomma, Ixodes,* and *Dermacentor* tick species. It has also been isolated from cat fleas. Generally an *Ixodes* tick must be attached for over 24 hours before spirochetes are transmitted. The length of feeding time for other possible vectors is yet unknown.

In 1991, 294 possible cases of Lyme borreliosis were reported to the Epidemiology Division, but only 57 patients met the definition for a confirmed case. A confirmed case was defined as a patient with physician diagnosed EM or experiencing cardiac, neurologic, and/or rheumatologic abnormalities with a positive laboratory test result. In 1991, ten of the 57 definite cases had cerebrospinal fluids positive for *B. burgdorferi* by polymerase chain reaction (PCR) tests.

Lyme borreliosis occurred in 29 Texas counties in 1991 as illustrated in Figure 18. A high percentage of cases (44%) resided in five counties in the Dallas-Fort Worth area. Sporadic cases were also identified throughout Texas.

Figure 18

Reported Cases of Lyme Borreliosis in Texas
by County of Residence, 1991



The majority (68%) of cases in 1991 were female. Cases ranged in age from 2-84 years; median age was 38.5 years. The overwhelming majority (93%) of cases were white.

Fifteen patients experienced at least one lesion described as EM; five patients reported two or more lesions. The lesions ranged in size from 4-10 centimeters. The majority (64%) of cases reported the lesions on the legs or thighs. Patients with erythema migrans had onset of symptoms March through October. Thirty-six patients experienced neurologic abnormalities and 21 patients experienced rheumatologic abnormalities. None of the patients died.

Only twelve patients recalled an attached tick before onset of symptoms. Three patients recalled multiple flea bites but no exposure to ticks.

MEASLES

Texas experienced a 93% decrease in measles morbidity in 1991 as 294 cases were reported from 46 counties throughout the state. In comparison, 4409 cases were reported from 104 counties in 1990. Texas accounted for 3% of the nation's measles morbidity and ranked 8th nationwide in total reported cases in 1991. Nationally, 42 states reported a total of 9,662 cases of measles.

Texas was fortunate not to have any measles-related deaths in 1991, but the number of hospitalizations and complications associated with measles continued to emphasize the severity of the disease. Forty-six percent (135/294) of the cases were hospitalized for a total of 598 hospital days. Patients who were hospitalized stayed an average of 4.4 days; the length of hospital stay ranged from 1-18 days. One or more complications were reported for 81 (28%) of all confirmed measles cases. These complications included otitis media (22), pneumonia (30), diarrhea (8), dehydration (24), and encephalopathy (2).

The following five counties accounted for the majority (57%) of Texas' measles morbidity: Lubbock (51 cases), Travis (38), Dallas (29), Hidalgo (25), and Jim Wells (24). Figure 19 illustrates the incidence rates of measles in individual counties in Texas. Case totals and incidence rates for all Texas counties are also provided in the Regional Statistical Summaries section.

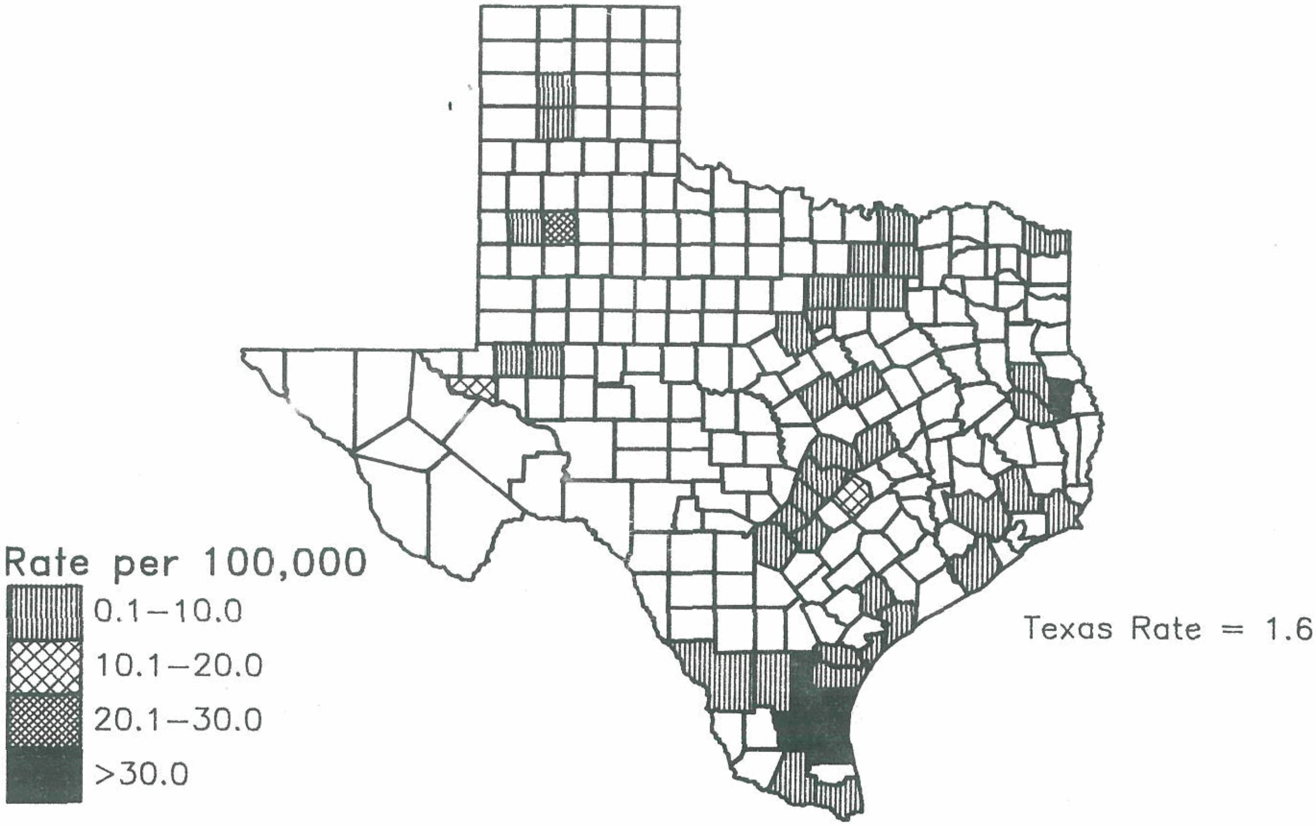
In 1991, at least five confirmed measles cases were reported for each month of the year. As is historically typical with measles, the majority of cases experienced onset of symptoms during the first five months of the year; 52% of all cases occurred January through May. Figure 20 illustrates reported cases of measles by month of rash onset.

Seventeen outbreaks of measles occurred during 1991. An outbreak was defined as two or more cases of measles serologically confirmed or epidemiologically linked. Six outbreaks involved ten or more cases, and four outbreaks involved 20 or more cases each. An outbreak began at Texas Tech University in Lubbock in May 1991 and accounted for a total of 60 cases, including spread to other areas of the state. Other countywide outbreaks of 20 or more confirmed cases included Jim Wells (42), Travis (35), and Hidalgo (25) counties. The measles outbreak in Jim Wells started in the fall of 1991 and continued into 1992.

The measles outbreak at Texas Tech University illustrates the need for all persons born after 1956 to be immune to measles. Teenagers and adults (15 years of age and older) accounted for a large percentage (38%) of Texas' 1991 measles morbidity. For persons born after 1956, adequate measles immunity is defined as a history of two doses of measles vaccine on or after the first birthday at least thirty days apart, a physician-verified history of disease, or serological evidence of immunity.

Figure 19

Reported Cases of Measles per 100,000 Population
by County of Residence, Texas, 1991

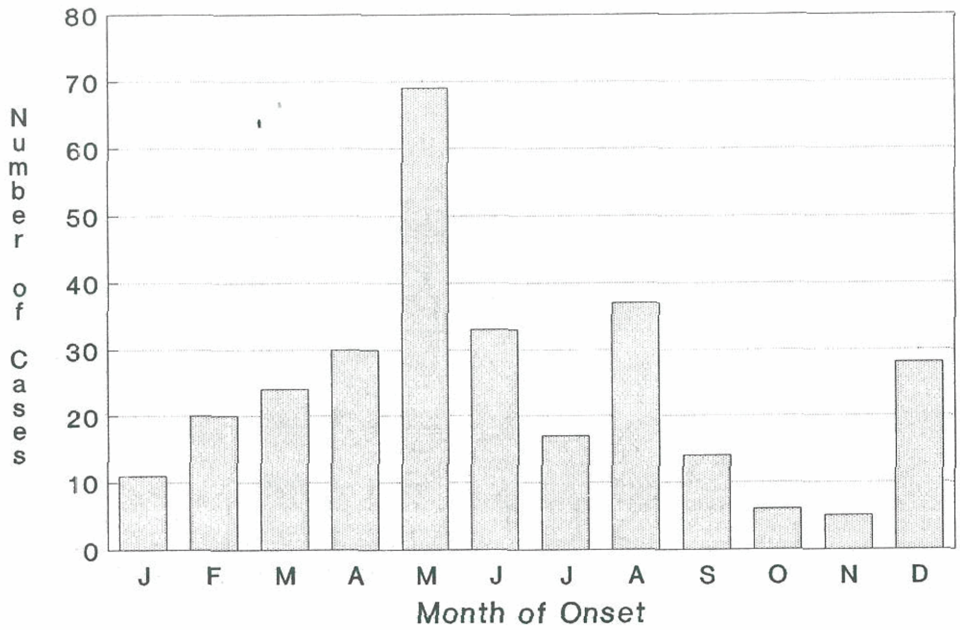


Confirmed measles cases ranged in age from 2 months to 59 years. Children under five years of age accounted for 54% of all Texas cases. Nationally this age group also accounted for a large percentage of total morbidity; 4762 cases (42%) were children under five years of age. The number of cases and incidence rates by age group are provided in Tables IV and V of the Appendix. Among children 1-4 years of age, Hispanics accounted for 68% of measles morbidity, whereas whites and blacks accounted for 18% and 14%, respectively. These percentages clearly illustrate the importance of immunizing young children according to the recommended immunization schedule. Measles vaccine is not usually indicated for infants under one year of age, but 21% of the cases occurred in this age group. National studies are underway to address the efficacy of measles vaccine at age 9, 12, and 15 months. These studies may result in changes to current recommendations for the administration of MMR vaccine.

Since 1989, large measles outbreaks both in Texas and the United States have focused attention on all vaccine-preventable diseases. Especially apparent is the failure of both public and private health care institutions and providers to immunize

Figure 20

Reported Cases of Measles in Texas
by Month of Rash Onset, 1991



infants and children at the appropriate age. Infant immunization initiatives to ensure 90% immunization levels of all two-year-olds by the year 2000 are now being implemented in Texas and throughout the United States. Removal of barriers to immunization including no-fee vaccines, "express-line" immunizations, and increased provider and parental education are important steps being undertaken in this initiative. Legislation was passed in Texas in 1991 to simplify immunization consent procedures; this should also help to attain this important goal.

Rash-type illnesses consistent with measles should continue to be monitored, laboratory confirmed, and promptly reported to local health officials. It is hoped that timely reporting of suspect cases will result in immediate implementation of outbreak control measures and lessen the physical, emotional, and financial impact that measles has had in Texas during the last few years.

Only the concerted efforts of both private and public health professionals and parents in immunizing their infants and children at the appropriate age, identifying and reporting measles disease, and promptly implementing outbreak control measures will lead to the reduction of measles morbidity in Texas.

MENINGOCOCCAL INFECTIONS

Meningococcal diseases are invasive infections caused by the bacteria *Neisseria meningitidis.* The most common presentations are meningitis and/or meningococcemia, but other manifestations such as septic arthritis and pericarditis may also occur. Meningococcal infections can also be asymptomatic or cause only upper respiratory symptoms, but only invasive disease is reportable in Texas. Meningococcal infections are confirmed by isolating the organism from a normally sterile body fluid, most often cerebrospinal fluid (CSF) or blood.

Reports of meningococcal disease in Texas were followed more closely by the Texas Department of Health's Infectious Diseases Program (IDP) during 1991. This more intensive and immediate review of case reports gave the IDP a more accurate view of the incidence of the disease throughout the state; 1991 turned out to be a very interesting year for meningococcal infections in Texas. There was a 7.5% increase in reported cases in 1991. The 100 cases reported resulted in an incidence rate of .6 cases per 100,000 population.

Three outbreaks of the disease were reported to the IDP in 1991. The first occurred in Austin (Travis County) over a 15-day period in early summer and involved four children (one of whom died) who lived in or regularly visited a low-income apartment complex. The investigation revealed that household crowding and sleeping in the same bed with an adult were risk factors for being a case. Antecedent chickenpox may also have been a risk factor. The second outbreak occurred in Houston (Harris County) over a three-day period late in the fall and involved three young teenagers (one death) attending the same junior high school. The source of these cases was not identified, however, there had been an extended influenza outbreak at the school that was entering its fourth week when the meningococcal cases occurred. A household outbreak of two cases was also reported in Austin late in the year involving an elderly woman who became acutely ill and died the day before her great grandson became ill. All three outbreaks were caused by *N. meningitidis* Group C.

Another interesting incident of meningococcal disease involved a 40-year-old, Hispanic male who was diagnosed with meningococcal meningitis (confirmed as Group B) in mid-August. His three-year-old son subsequently developed meningococcal meningitis (also confirmed as Group B) two months later. None of the eight household contacts were prophylaxed at the time of the father's illness, however, all received rifampin when the second case occurred 65 days later.

Meningococcal infections in Texas continued to be reported primarily among infants and young children. Almost half (48%) of the cases were under ten years of age. The distribution of cases among various age groups along with their corresponding incidence rates are provided in Tables IV and V of the Appendix. Cases were fairly evenly distributed by sex with a male to female ratio of 1.2:1 (M:F). The distribution of cases by race/ethnicity was 49% white, 20% Hispanic, 25% black, and 6% were other or unknown.

Only nine individuals died as a result of a meningococcal infection during 1991. This resulted in a case-fatality rate (CFR) of only 9%, the lowest since 1986 when the CFR was 5.8%.

OCCUPATIONAL DISEASES

The Texas Occupational Disease Reporting Act was passed by the 69th Legislature in 1985. This Act required the reporting of adult elevated blood lead levels, asbestosis, and silicosis and gave the Texas Board of Health the authority to add other preventable occupational diseases to the list. Later that same year, the Board made acute occupational pesticide poisoning a reportable condition in Texas.

Acute Occupational Pesticide Poisoning

The Environmental Epidemiology Program (EEP) conducts active surveillance of acute occupational pesticide poisonings throughout the state; funding is provided by the National Institute for Occupational Safety and Health (NIOSH). This surveillance effort concentrates on three specific geographic regions of Texas where labor-intensive crops are grown: the Winter Garden area in south central Texas, the Rio Grande Valley in far south Texas, and the Southern High Plains in north Texas and Texas Panhandle; reports are, however, also received from other areas. In 1991, 44 migrant health clinics, 31 hospital emergency rooms, and 26 physicians participated in the surveillance system.

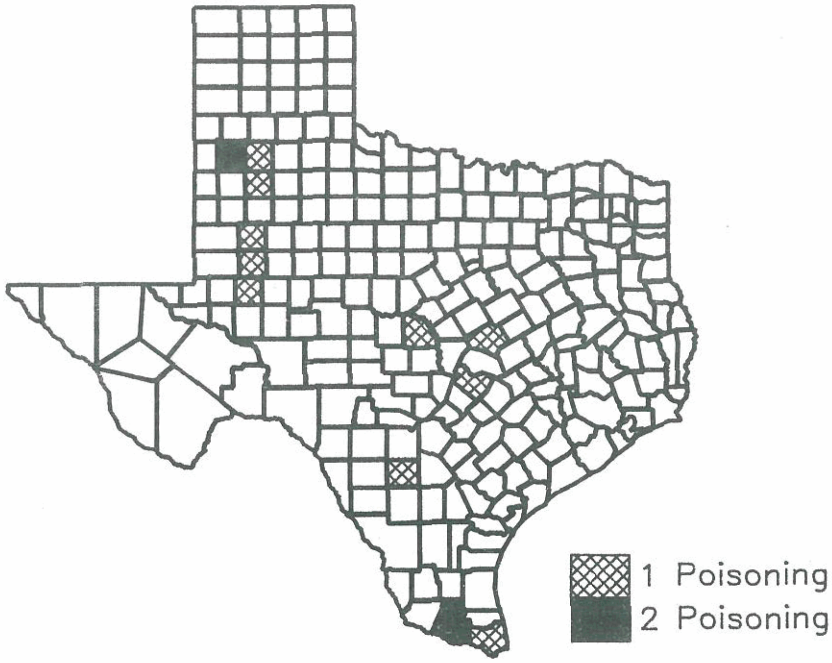
Fourteen incidents involving 14 cases of acute pesticide poisoning were reported to the Texas Department of Health. Cases ranged in age from 16-59 years of age, and the majority of cases were Hispanic. Males outnumbered females 7:1 and accounted for 86% of the cases. In comparison, five incidents involving 61 cases of acute occupational pesticide poisoning were reported in Texas in 1990. The majority of these cases were black, and females outnumbered males 4:1. Reports of acute occupational pesticide poisoning in Texas are geographically presented in Figure 21.

Adult Elevated Blood Lead Levels

Physicians, laboratories, and other responsible parties are required to report to the Texas Department of Health all blood lead levels of 40 micrograms or greater per deciliter of blood (ug/dl) in persons 15 years of age or older. Funding for the blood lead surveillance system has been provided by the NIOSH since 1987.

Figure 21

Occupational Pesticide Poisonings by County of Occurrence, Texas, 1991



During calendar year 1991, the EEP received 622 reports of elevated blood lead levels for 269 individuals. Because the Occupational Safety and Health Administration (OSHA) requires that employees be tested at two-month intervals if their blood lead levels exceed 40 ug/dl, multiple reports were received on many individuals. From the 269 individual reported, 52 individuals were additions to the surveillance program.

The overwhelming majority of the 269 individuals reported with elevated blood lead levels were male (97%). Hispanics represented 44% (119) of the cases reported, 33% (89) were non-Hispanic whites, and 19% (52) were black. The largest age group of reported elevated blood lead levels were 25-34 years of age; 31% (86) occurred in this age group.

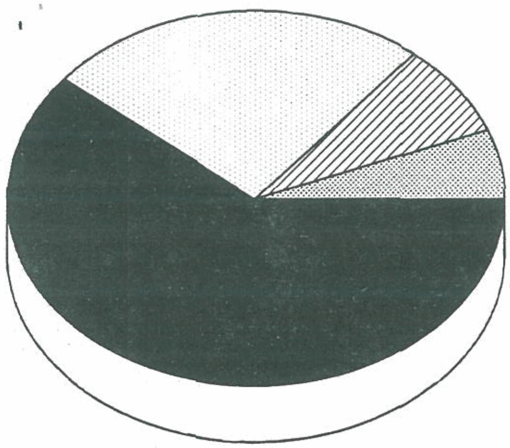
Figure 22 shows the percentage of newly diagnosed cases by type of industry. As in previous years, most of the reported elevated blood lead levels were from workers who were employed in battery manufacturing.

Reports of elevated blood lead levels are prioritized on the basis of the blood lead level and the presence of symptoms. If an employee's blood lead level is greater than 60 ug/dl, averages 50 ug/dl over a six-month period, or symptoms of lead poisoning are reported, their work sites are considered high priority and are inspected by local or state health department staff to identify the source of lead exposures on the job. Industrial hygiene inspections measure lead exposures.

An industrial hygiene inspection was conducted in a plastic pigment industry facility during the summer of 1990. In April 1991, several employees still had elevated blood lead levels and many of the recommendations made by TDH had not been initiated by the company. The company is working with OSHA to make necessary corrections.

Figure 22

Newly Diagnosed Adult Elevated Blood Lead Levels by Type of Industry, Texas, 1991



Asbestosis

The majority (53%) of the 169 cases of asbestosis reported to the Texas Department of Health during 1991 was reported by hospitals; 47% were identified by reviewing death certificates filed with the TDH Bureau of Vital Statistics.

Virtually all (98%) of the asbestosis cases were male; only three of the reported cases were female. The distribution of cases by race/ethnicity included non-Hispanic whites, 82%; blacks, 14%; and Hispanics, 2%. The race/ethnicity of 2% was not identified. The distribution of cases by age group is provided in Figure 23; cases ranged from 35-92 years of age.

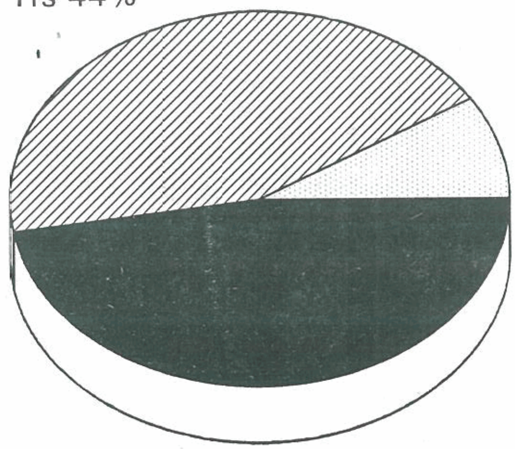
A variety of occupations were identified among the cases reported in 1991. Among the types of occupations listed on males' death certificates were construction, sales, judge, electrical, carpenter, pipefitter, engineer, insulator machinist, fireman, and millwright; the women were mostly housewives. No single occupation was identified as the cause of the asbestosis-related deaths.

Silicosis

Thirteen cases of silicosis were reported in Texas during 1991. Reports of silicosis in Texas are for the most part identified during reviews of death certificates, and 11

Figure 23

Distribution of Reported Asbestosis Cases in Texas
by Age Group, 1991



cases were identified this way in 1991. Forty-six percent of the individuals who died from silicosis were reported to have been a painter or painter/sandblaster on their death certificates. The types of occupations listed for the remaining individuals were laborer, construction, copper finisher, and miner; one occupation was unknown.

All cases of silicosis were male. Of the cases reported, 46% (6) were non-Hispanic whites, 31% (4) were Hispanic, and 23% (3) were black. The youngest individual (a sandblaster) reported with silicosis was 26 years of age; the oldest (a farm laborer) was 86.

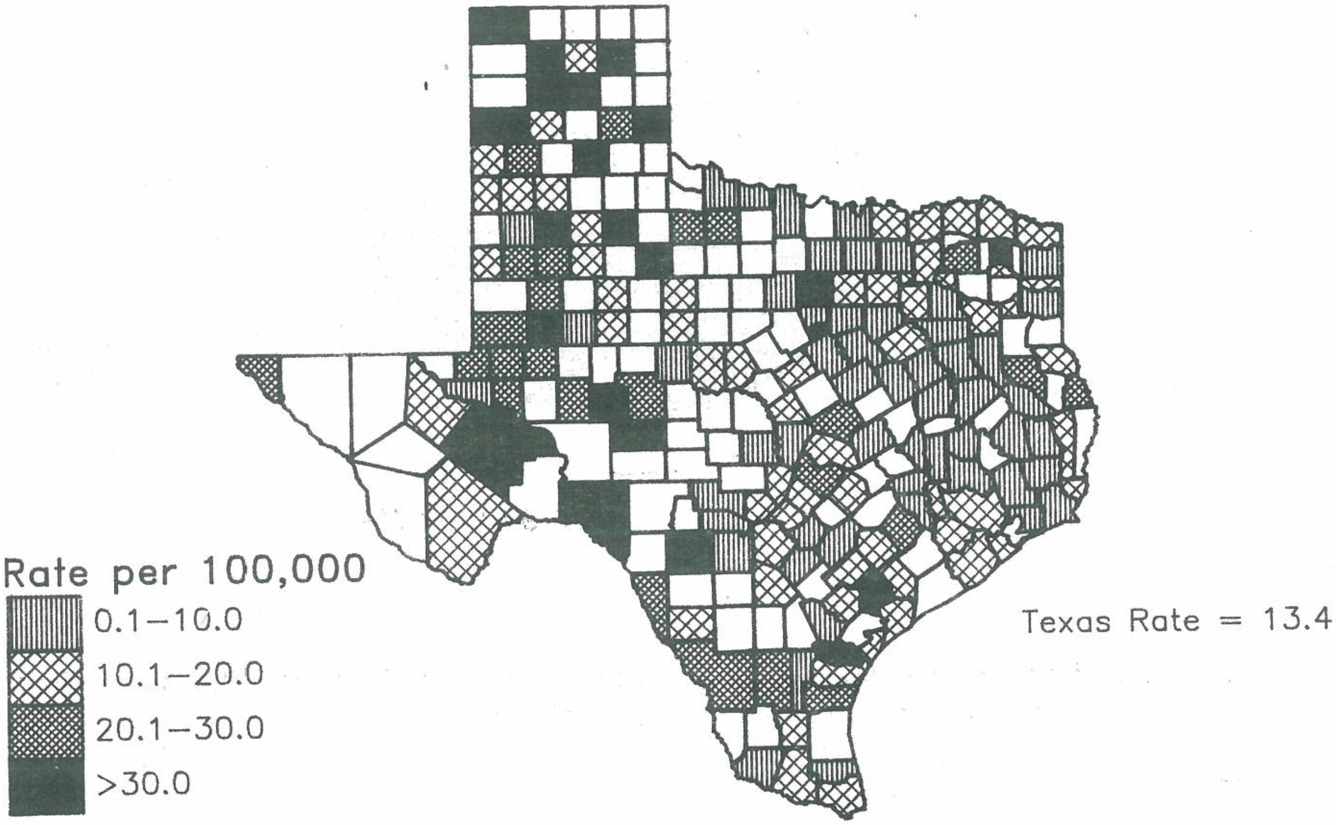
SALMONELLOSIS

During 1991, 2317 cases of salmonellosis were reported throughout Texas. The statewide incidence rate was 13.4 cases per 100,000 population. This rate has ranged from 13.0 to 13.6 since 1988. The geographic distribution of incidence rates for 1991 in individual Texas counties is presented in Figure 24; the actual number of cases and their corresponding rates are provided in the Regional Statistical Summaries section.

Forty-five percent of the Texas cases were children under five years of age, and 20% were infants under one year of age. The age-specific incidence rates for these two

Figure 24

Reported Cases of Salmonellosis per 100,000 Population
by County of Residence, Texas, 1991



age groups were 39.0 cases per 100,000 and 211.5 cases per 100,000, respectively. Hispanics experienced salmonellosis at a rate of 17.9 cases per 100,000 followed by 7.5 for whites, and 6.8 for blacks. The rates of salmonellosis were essentially the same for Hispanics in 1991 as they were in 1990, but the rates among whites and blacks were slightly less compared with 1990 rates.

Seventy-six different serotypes of *Salmonella* were identified by the Texas Department of Health's Bureau of Laboratories in 1991, and the serotype was reported for 66% of the salmonellosis cases reported. The ten most frequently isolated serotypes are listed in Table 3. Since 1980, *S. typhimurium* and *S. newport* have been the first and second most commonly reported serotypes in Texas, respectively. The rate of *S. enteritidis* serotypes increased in 1991 to 5.6% from 3.8% in 1990.

Table 3

Reported *Salmonella* Serotypes in Texas
Texas Department of Health, Bureau of Laboratories, 1991

Serotype	Number of Isolates	Percent of Total
Typhimurium	273	19.0%
Newport	160	11.1
Group C	86	6.0
Enteritidis	80	5.6
Javiana	77	5.3
Group B	77	5.3
Montevideo	67	4.7
Hadar	60	4.2
Oranienberg	57	4.0
Heidelberg	56	3.9
Other Serotypes	448	31.1

Six deaths associated with salmonellosis were reported in Texas in 1991. The cases who died ranged from 2 months to 98 years of age. Five of the six deaths were females. Four of the six deaths were white, one was Hispanic, and one was black. Two other deaths occurred that may have been related to a salmonellosis infection, but the deaths occurred 64 days and 103 days after onset of infection.

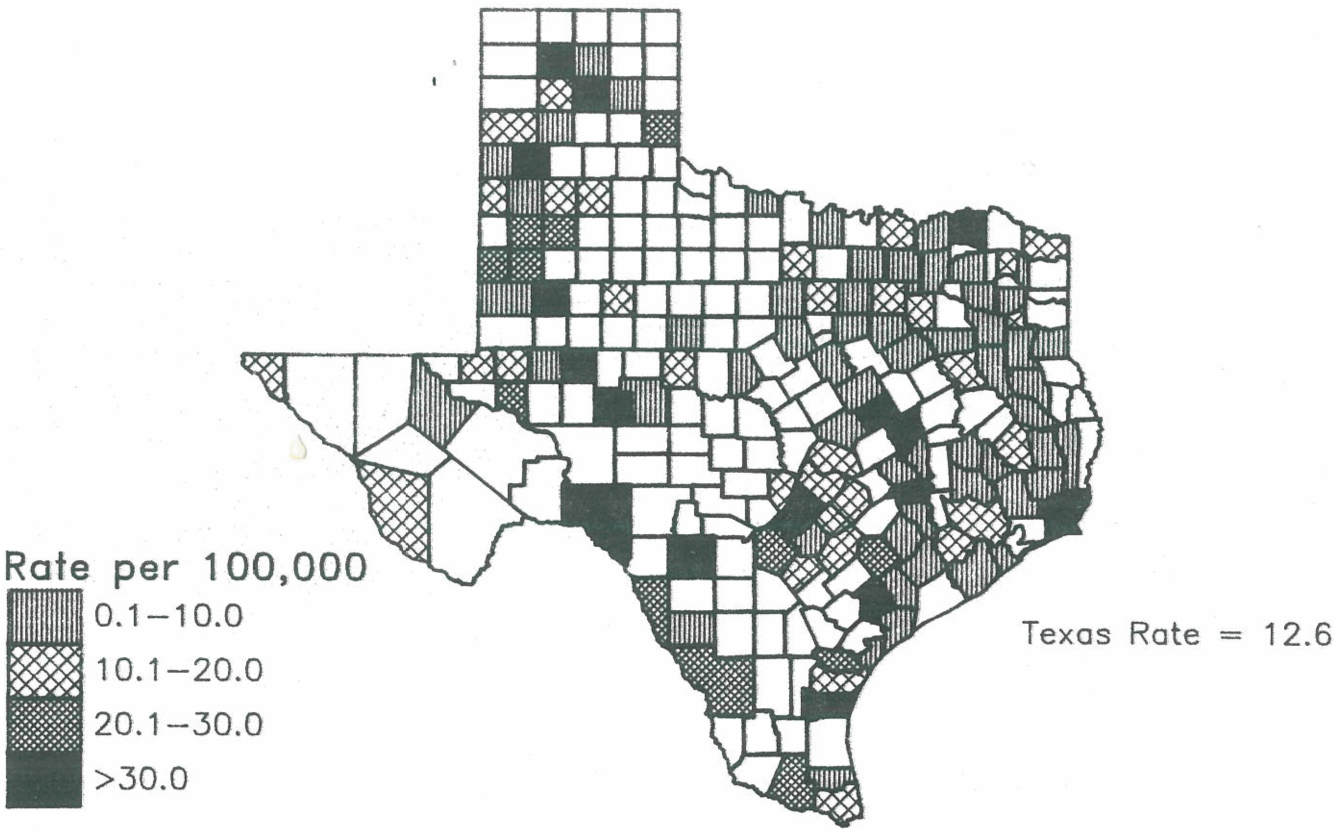
SHIGELLOSIS

Texas experienced a 39% decrease in reported shigellosis morbidity in 1991 as a total of 2,178 cases of shigellosis were reported. This was a decrease of over 1,300 cases from that reported in 1990. The annual statewide incidence rate for 1991 was 12.6 cases per 100,000 population, and the geographic distribution of shigellosis by county is provided in Figure 25. The actual numbers of cases in individual counties and their corresponding incidence rates are provided in the Regional Statistical Summaries section.

Forty percent of the cases reported were children under four years of age. Children 1-4 years of age experienced the highest age-specific incidence rate, 60.0 cases per

Figure 25

Reported Cases of Shigellosis per 100,000 Population
by County of Residence, Texas, 1991



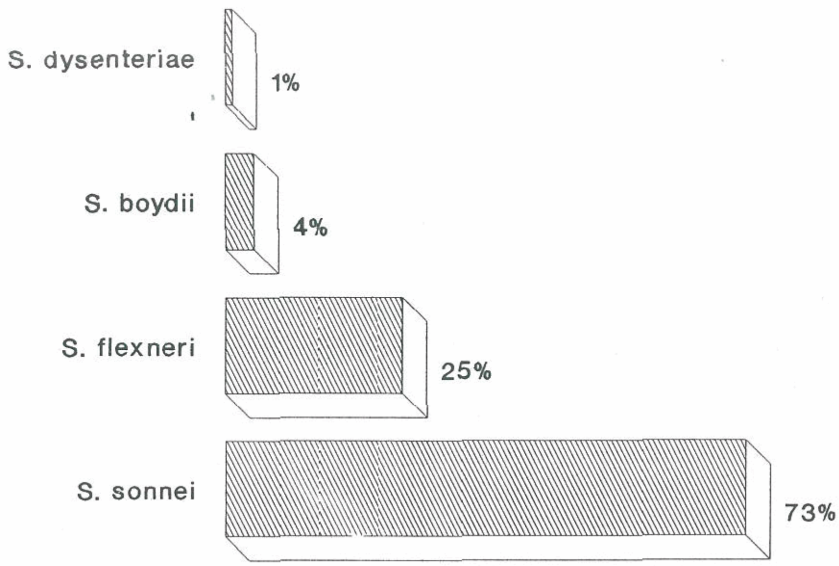
100,000 population. The incidence of shigellosis continued to be higher among Hispanics than among whites or blacks in Texas. Hispanics experienced a rate of 23.6 cases per 100,000 population; the corresponding rate for whites was 4.8 per 100,000 and 15.0 for blacks.

The serotype was identified and reported for 72% of the cases in 1991. Of the 1,575 cases on whom this information was available, 73% were *S. sonnei*, 25% were *S. flexneri*, 4% were *S. boydii*, and 1% was *S. dysenteriae* (Figure 26).

Five outbreaks of shigellosis were reported to the Infectious Diseases Program in 1991, but these outbreaks accounted for only 3% of the total cases of shigellosis reported in Texas. The outbreaks occurred in three different cities. Houston and Katy (both in Harris County) reported two outbreaks each, and one outbreak occurred in Paris (Lamar County). The outbreaks ranged in size from 2-18 cases. *Shigella sonnei* was identified in each of the five outbreaks.

Figure 26

Distribution of *Shigella* Serotypes
Texas, 1991



Six deaths related to shigellosis were reported in 1991. The patients who died ranged in age from 1 month to 87 years. The deaths occurred in five different counties; two deaths occurred in Hidalgo County, and Harris, Bexar, Travis, and Williamson counties reported one death each. Two of the deaths were elderly females 87 and 85 years of age, and one of these was associated with an outbreak in a nursing home in Houston. Both of the women died within the first two days of illness. The other four deaths were children ranging from one month to four years of age and were all females. All the children died within 1-3 days after onset of illness. The *Shigella* serotype was reported on only two of the deaths; one was related to a *S. sonnei* infection and the other was confirmed as *S. flexneri*.

TETANUS

Tetanus is a serious neurologic disease which should be completely preventable. Although the incidence of tetanus is now low throughout the United States, cases continue to occur. Ten cases of tetanus were reported to the Texas Department of Health during 1991; three of these individuals died.

The ten Texas cases ranged in age from 6-98 years. All of the ten were inadequately immunized, and in fact, six had never been vaccinated against tetanus. In spite of the fact that tetanus toxoid is one of the least expensive and most effective the fact that tetanus toxoid is one of the least expensive and most effective biologicals available, many Texans are inadequately immunized against the disease, especially adults. Even the six-year-old child had never been vaccinated against tetanus; he slipped through the cracks of Texas' school immunization requirements because he was not enrolled in any public or private school in the state.

The Infectious Diseases Program surveyed each of the hospitals where the ten Texas cases were cared for and learned that these patients incurred hospital charges that totaled more than $878,500 collectively; this dollar amount reflected hospital costs only and did not include any physician fees. Hospital stays ranged from 3-93 days. Patients with the shortest hospital stays (3, 6, and 7 days) were those who died, and those who recovered stayed in the hospital an average of 41 days. The Immunization Division, TDH, reported that a single dose of the combined tetanus-diphtheria toxoid (Td) cost the state less than $ 0.15; just under six million doses of vaccine could have been purchased with the $878,500 it took to care for the ten cases of tetanus, enough vaccine to have administered the complete primary series to almost two million unvaccinated adults.

Older adults and the elderly, especially those who live alone, are probably at greatest risk of developing tetanus since they are less likely to seek medical attention for what they perceive to be minor or insignificant injuries. The severity of a wound should not necessarily be a consideration for vaccination; many of the tetanus cases reported in Texas over the past ten years have been associated with minor injuries such as scratches, small cuts, and burns. In fact, three of Texas' ten cases had no history of an injury; one was, however, a diabetic with a severely infected toe, one had a long history of poor dental hygiene and many bad teeth, and another was a gardener with no acute wound. Three individuals had puncture wounds from stepping on nails; three had other puncture wounds or lacerations to the legs or feet; and one man was scratched in the face by a peacock.

TUBERCULOSIS

During 1991, 2525 cases of tuberculosis were reported to the Tuberculosis Elimination Division, Texas Department of Health. This was an increase of 13% over 1990 morbidity and was the highest number of cases reported in a single year since 1975.

In Texas, tuberculosis disease affects the various race and ethnic groups quite differently, and these differences are compared in Table 4. The reasons for these differences are not clearly understood and cannot be explained simply by race/ethnicity alone, but are more likely the result of disproportionate numbers of individuals who are at high risk in certain race and ethnic groups.

Table 4

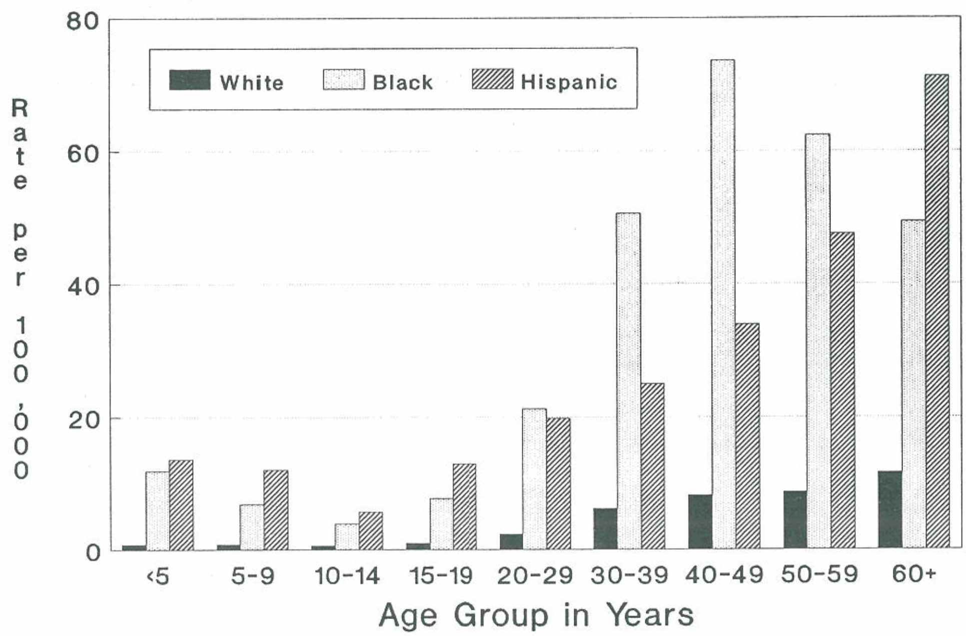
Reported Tuberculosis Cases by Race/ethnicity
Texas, 1991

Race/ethnicity	Number of Cases	Percentage of Total Cases	Case Rate (per 100,000)
Whites	603	24%	5.6
Blacks	680	27%	33.0
Hispanics	1069	42%	24.3

Figure 27 illustrates the incidence rates of tuberculosis by age group and race/ethnicity; there are several distinct differences which will be further discussed.

Figure 27

Reported Cases of Tuberculosis per 100,000 Population
by Age Group and Race/ethnicity, Texas, 1991



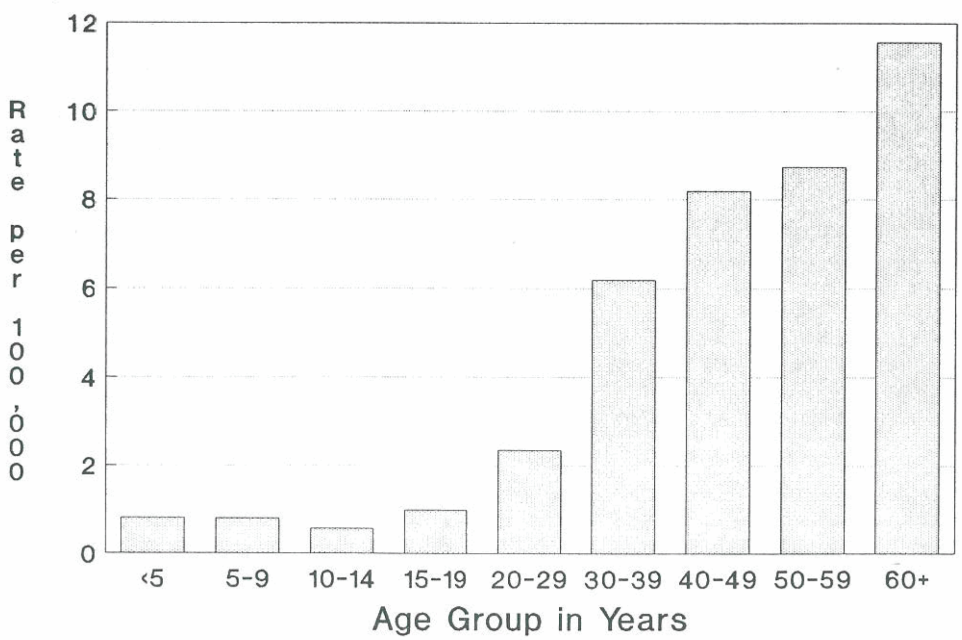
Tuberculosis in children under 15 years of age has increased 68% since 1988; 127 cases were reported in 1988 compared with 213 reported in 1991. Consequently, the incidence rate for this age group increased from 3.2 cases per 100,000 population in 1988 to 5.0 in 1991. This increase could reflect increased diagnosis and/or reporting as a result of recent publicity about tuberculosis. Even if that were true, however, the occurrence of any tuberculosis disease or infection among children is distressing as it indicates the recent transmission of the TB organism within the community.

The lower rate of tuberculosis among white children most likely reflects a lower transmission rate among whites. In general, whites tend to have access to medical care and preventive therapy at an earlier age, as well as less poverty and less household crowding, all of which are important factors related to the problem of tubercle bacilli transmission. A higher economic status also usually means better nutrition and a greater likelihood that disease will not develop even when infection does occur.

The higher rate of tuberculosis disease among Hispanic children may be partially attributed to the higher percentage of children who have parents from countries with a high prevalence of tuberculosis infections. The higher rate of infection among these parents results in a higher risk of the development of contagious tuberculosis disease in this population and, therefore, a greater risk of exposure for Hispanic children.

Figure 28

Reported Cases of Tuberculosis Among Whites per 100,000 Population by Age Group, Texas, 1991

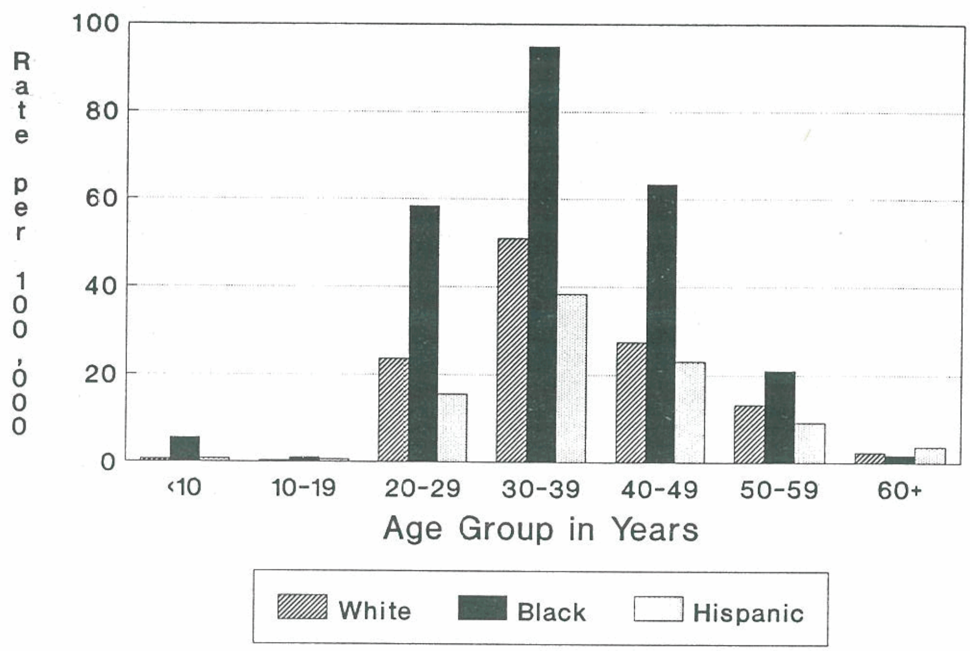


Generally lower tuberculosis disease rates for children 5 - 14 years of age have been seen in many areas of the world. Although the reasons for this "favorable school age period" are not known, a change in this pattern has been reported in some populations with a high degree of perinatal transmission of Human Immunodeficiency Virus (HIV). Such a change in pattern is less distinct for Hispanics or blacks in Texas during 1991. This pattern is for white children even when the scale of the graph is changed to account for their much lower TB case rates. (Figure 28). This is probably due to the low number of cases in this group, but will require further review as more case specific HIV status information becomes available.

The number of tuberculosis cases among Hispanics in Texas peaks in young adults. Blacks in this age group have a similar case rate. During the pre-HIV era, this was the age group in developing countries reported to be most severely affected by tuberculosis disease. The reasons for this are not certain, but the increased stresses of beginning a family, establishing a secure place in society, hard work with marginal nutrition, and crowded living conditions may all have been factors. Economic factors in Texas may put certain groups at greater risk of tuberculosis.

Figure 29

Distribution of Diagnosed AIDS Case Estimates by Race/ethnicity, Texas, 1991



Blacks 31-60 years of age experience tuberculosis at much higher rates than do whites or Hispanics; HIV infections also have a significant impact on this age group, and HIV infection is the strongest known risk factor for tuberculosis disease. Figure 29 illustrates the age distribution for reported AIDS cases by race/ethnicity in Texas during 1991 and confirms that persons 31-60 years of age are disproportionately affected by symptomatic HIV infections and blacks are more likely to be reported with AIDS than whites or Hispanics. This is compatible with the peaks of tuberculous disease among blacks in these same age groups and may, at least in part, explain the variation in tuberculosis case rates between race/ethnic groups.

In both non-Hispanic whites and Hispanics, the highest case rates occur in the seventh decade and beyond. A decrease in function of the immune system with age is thought to play a significant role in the higher incidence rates of tuberculosis disease in these age groups. An aging immune system allows tubercle bacilli populations to begin to grow after years or even decades of being adequately controlled. Concurrent debilitating illness may also play an important role. Diabetes mellitus, a strong risk factor for the development of tuberculous disease, is very prevalent among older Hispanics and may explain a large portion of the difference in tuberculosis rates.

Another factor mentioned earlier is that a larger proportion of Hispanics was probably born and spent some years of their life in areas of high tuberculosis disease prevalence resulting in a larger proportion of this group carrying tubercle bacilli. The intermediate position of the tuberculosis rate among blacks in this older age group may also represent a less extensive mix of these two factors.

VIBRIO CHOLERAE 01 AND OTHER *VIBRIO* INFECTIONS

One imported case of toxigenic *V. cholera* 01 serotype Inaba biotype El Tor was reported in Texas during 1991. This was the first case of cholera in Texas since 1988. The patient was a 34-year-old female, Travis County resident, who had been visiting family in Phnom Penh, Cambodia. She reported that during her visit overseas, she had eaten seafood, which she was not able to identify, and had ice cubes in beverages. No other family members became ill. She became ill on her flight home and was hospitalized in Chicago, Illinois. Her symptoms included severe watery diarrhea for 3 1/2 hours on the flight; she was severely dehydrated by the time the plane landed in Chicago and was hospitalized for four days recovering without complications.

Twenty-five other *Vibrio* infections occurred in Texas during 1991. *Vibrio vulnificus* was the causative organism of 46% (11) of these infections. Other organisms involved were: *V. cholerae* non 01 (8), *V. parahaemolyticus* (3), *V. fluvialis* (2), and *V. alginolyticus* (1). The cases ranged in age from 9 months to 91 years. Seventy-six percent of the cases were males. Whites accounted for 76% of the cases, and blacks and Hispanics accounted for 12% each. Onset dates for the cases ranged from March through November. Fifty-five percent of the cases occurred between May and August.

There were three deaths related to *Vibrio* infections; all three cases had *V. vulnificus* isolated from a blood culture. One death was related to the consumption of raw oysters, and the other two deaths were related to contaminated open wounds. One man punctured his skin with a shrimp while baiting a fishhook. The deaths ranged in age from 50-70 years. Two of the deaths were males. One of the deaths occurred one day after onset of illness, the other two deaths occurred 11 and 12 days after onset of symptoms.

VIRAL HEPATITIS

Viral hepatitis is a collective term describing a group of at least five distinct infectious diseases of the liver. Symptoms may include malaise, anorexia, fatigue, abdominal discomfort, dark urine, and often times jaundice. The symptoms appear remarkably similar among the different types of viral hepatitis, thus making a specific diagnosis on initial clinical impression alone difficult. The epidemiologic characteristics of each type of viral hepatitis, however, distinguish one from the other, and dictate the specific prevention measures needed to control person-to-person transmission.

The two major types of viral hepatitis are hepatitis A and hepatitis B, and approximately 90% of all the reported cases of viral hepatitis in Texas are one of these two types. Within the reporting category of "non-A, non-B" hepatitis is hepatitis C, a bloodborne disease largely associated with post-transfusion hepatitis prior to 1990. Hepatitis D, another bloodborne infection, is unique in that it can occur only in individuals who have active hepatitis B, such as in acute hepatitis B or in hepatitis B chronic carrier states. Hepatitis E, previously known as enteric non-A, non-B hepatitis, has not been identified in the United States as yet but has occurred in villages near Mexico City in recent years. In addition to the type-specific reporting, cases are also reported as "hepatitis type unspecified." This reporting category is for the most part used to record cases diagnosed without specific serologic testing.

There were 5,031 cases of viral hepatitis reported in Texas in 1991, an increase of only 2% over 1990 morbidity. The numbers of cases and corresponding incidence rates for individual counties are provided in the Regional Statistical Summary section.

Hepatitis A

Hepatitis A is an acute, self-limiting enteric disease that occurs primarily among children and young adults, although persons of all ages are susceptible. The hepatitis A virus (HAV) is concentrated in stool so the disease is transmitted person to person when fecally-contaminated objects or liquids are placed in the mouth or consumed. Situations that often facilitate HAV transmission are those where poor personal hygiene prevails, or where food or water become contaminated because of poor sanitation.

Table 5

Reported Cases of Hepatitis A
Texas, 1991

	1991	1990
Case Total	2,663	2,772
Counties Reporting	141	149
Incidence Rate	15.4	16.0
By Race/Ethnicity:		
White	8.2	7.4
Hispanic	34.1	38.1
Black	5.2	4.9
Male:Female Ratio	1:1	1:1
Deaths	6	6
Case-fatality Rate	0.2%	0.2%

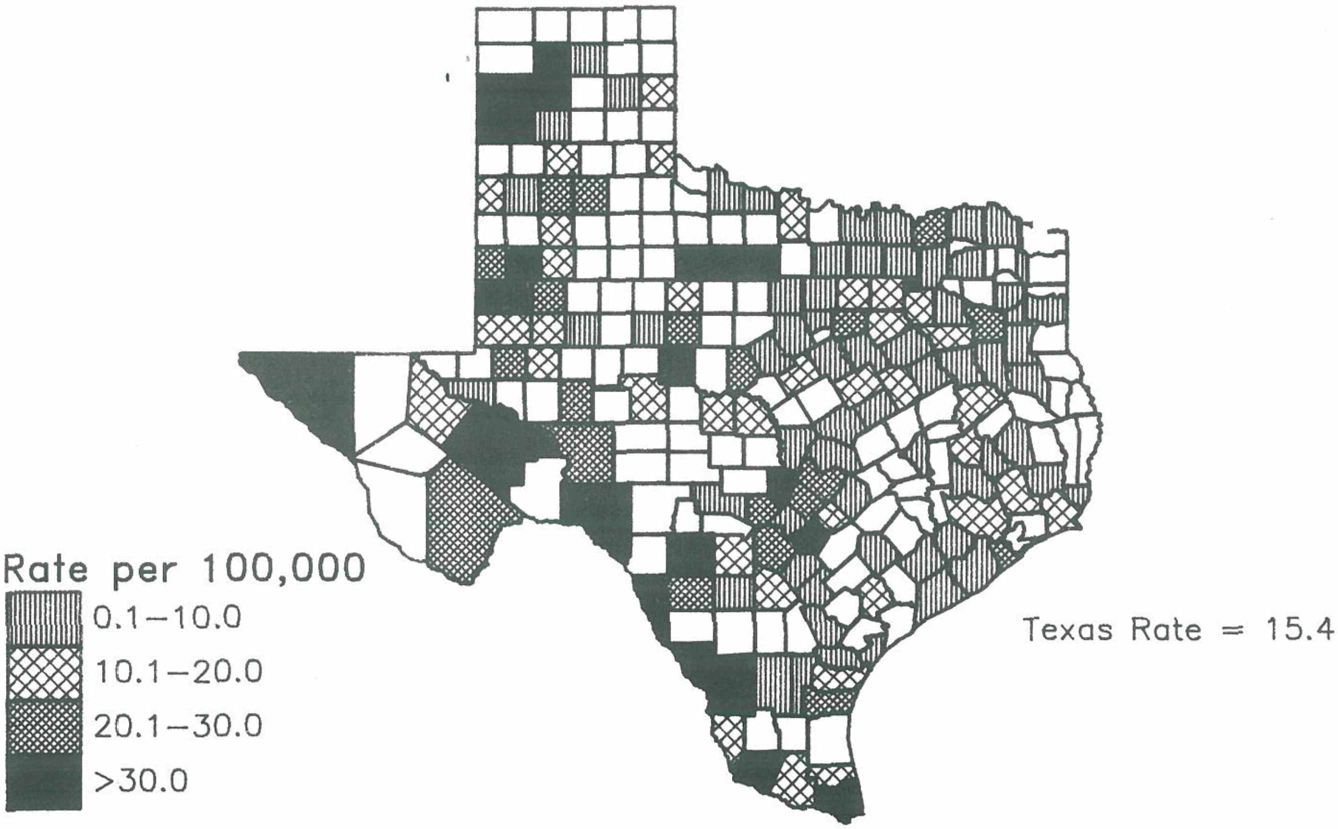
In 1992, 2663 cases of hepatitis A were reported to the Infectious Diseases Program (IDP). In spite of the 17% decrease in cases from 1990, hepatitis A was the most frequently reported disease monitored by the IDP in 1991 (excluding the numerically reported diseases). The geographic distribution of incidence rates by county is presented in Figure 29. Over 98% of the cases were diagnosed by serology.

Hepatitis A is primarily a disease of young people, and the group most affected are children 5-9 years of age; incidence rates of hepatitis A by age group are represented in Figure 30. More than half (51%) of the cases were reported in persons under 15 years of age, and three out of four cases (76%) were under 30 years old. Even though the incidence of hepatitis A is usually highest among children, there is usually an increase noticed in adults in their twenties and early thirties; this may actually represent the parents of infected children. Children often acquire hepatitis A in groups settings, as in day-care centers, and from there spread the disease to other family members. Clusters of cases associated with these settings often go undetected until the illness shows up in parents or older siblings, family members who are more likely to develop classic symptoms of hepatitis. Incidence drops off sharply for individuals 40 years of age and older.

Hepatitis A affects males and females equally, but there is a continued focus of the disease among Hispanics as illustrated in Figure 31. The incidence rate of hepatitis A in Hispanics is 4-5 times higher than in whites or blacks. Approximately two-thirds

Figure 29

Reported Cases of Hepatitis A per 100,000 Population
by County of Residence, Texas, 1991



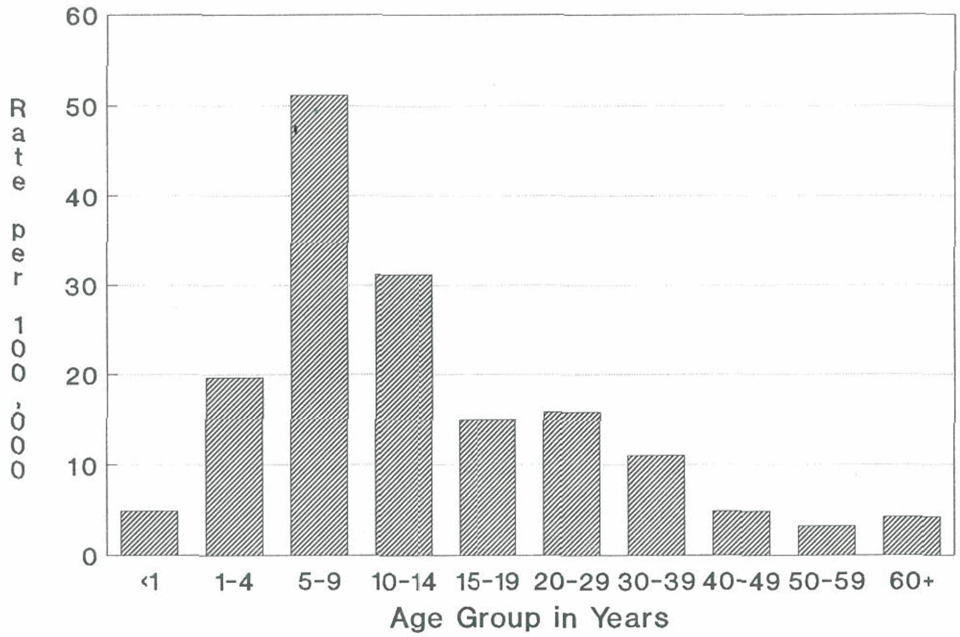
(68%) of the reported cases among Hispanics were children under 15 years of age, and 94% of the cases less than 40 years of age. Interestingly, approximately one of every three hepatitis A cases in Texas (38%) was a Hispanic child under the age of 15 years.

The age distribution of hepatitis A among whites suggests that infection in childhood occurs less frequently compared with Hispanics; consequently, white adults are more susceptible to the disease. Among whites, only 32% of the cases were children under the age of 15 years; and adults 20-39 years of age accounted for 44% of the cases. Hepatitis A in whites was more evenly distributed among age groups than for Hispanics where there was a distinct cluster of cases among children.

There were six deaths due to hepatitis A in Texas during 1991. A review of death certificates revealed the immediate causes of death to be fulminant hepatitis. The deceased ranged in age from 32-84 years; mean age was 52.5 years. All but two of

Figure 30

Reported Cases of Hepatitis A per 100,000 Population by Age Group, Texas, 1991



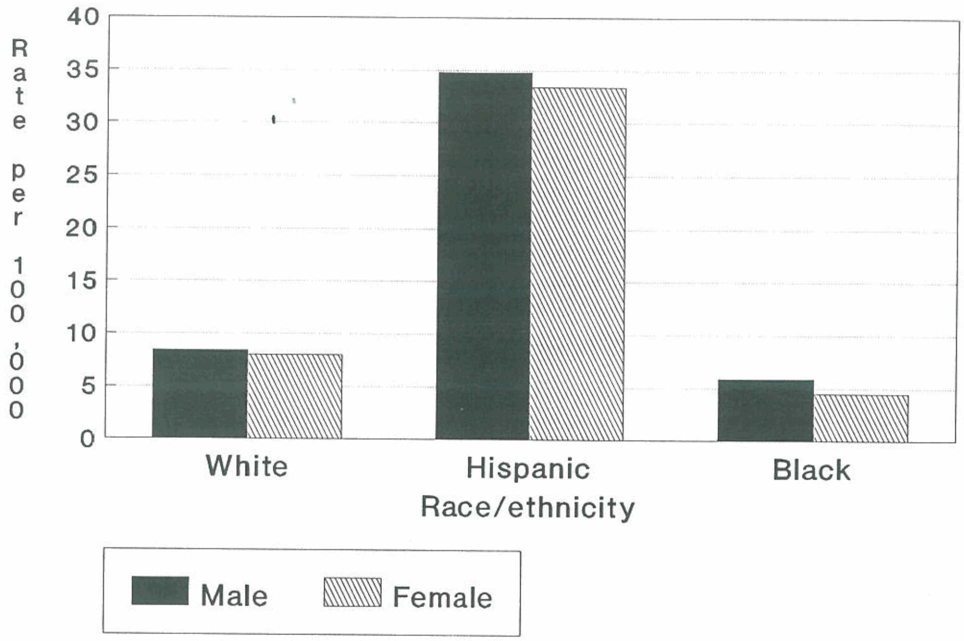
the deceased were female, and deaths were divided evenly between whites and Hispanics.

Over the years, most of the hepatitis A outbreaks reported to the IDP have involved children, day-care centers, or schools. Even some foodborne outbreaks of hepatitis A have been attributed to foodhandlers who unknowingly had contact with infected children, usually within their households. In Harris County, a cluster of seven cases was identified among participants in a church-sponsored "Mothers Day Out" in January 1991. The group held a Christmas pot-luck meal on December 13, 1990, and the menu included numerous salads, appetizers, and other cold dishes. One of the mothers contributed a food item despite the fact that she was not feeling well, and hepatitis A cases were identified January 5-18, 1991. Investigators ultimately linked this cluster to the day-care group. Other day-care related clusters of hepatitis A were noted in Harris County in 1991, in Huffman, Katy, and Channelview.

Elsewhere in the state, an outbreak of approximately 30 cases of hepatitis A occurred in the town of Munday (Knox County). All but two of the cases were children, ranging in age from 1-14 years. Fourteen of the children were 6-7 years of age. All of these attended the same elementary school, and most were in the second grade. The cases occurred over a two-month period from mid-February to mid-April and extended over approximately three cycles of infection. At least ten cases were identified among siblings in three families. Person-to-person transmission within families and at school was implicated as a means of spread. Because of this

Figure 31

Reported Cases of Hepatitis A per 100,000 Population by Sex and Race/ethnicity, Texas, 1991



outbreak, Knox County had an annual incidence rate of 655 cases per 100,000 population, the highest of any county in Texas. This outbreak also stirred up controversy over the safety of immune globulin (IG). Once again, the unfounded notion of possible contamination of IG with human immunodeficiency virus (HIV) was raised, and the ensuing confusion interfered with efforts to protect case contacts from exposure to hepatitis A.

Hepatitis Type Unspecified

Cases of hepatitis diagnosed on clinical impression alone are often reported in this category, but since 1983, the number of cases reported as "unspecified" in Texas has decreased significantly. In 1991, the 260 cases reported was approximately one-tenth (11%) of what was reported in 1983 (2,387 cases). This trend may reflect the increasing use of serologic testing to diagnose hepatitis accurately. In 1991, 90% of the unspecified cases were diagnosed without serologic testing.

Demographic analyses suggest that many unspecified hepatitis cases are in reality hepatitis A; as with hepatitis A, there is a focus among Hispanics, rates are highest in children, and cases are fairly evenly distributed by gender. Among whites, 79% of cases were persons under the age of 40, whereas among blacks, cases clustered among adults, 20-49 years of age; 74% of the cases of unspecified hepatitis were black (Figure 32), and among Hispanics, children under 15 years old represented 49% of the unspecified cases.

Table 6

Reported Cases of Unspecified Hepatitis
Texas, 1991

	1991	1990
Case Total	260	287
Counties Reporting	40	47
Incidence Rate	1.5	1.7
By Race/Ethnicity:		
White	0.7	0.8
Hispanic	3.4	3.6
Black	1.5	1.6
Male:Female Ratio	1:1.2	1:1
Deaths	4	5
Case-fatality Rate	1.5%	1.7%

There were four deaths reported as unspecified hepatitis in Texas in 1991. All but one of the deceased were male, and the deceased ranged in age from 26-71 years. Fulminant hepatitis was listed as the immediate cause of death for three of the individuals, and the fourth person, the youngest at age 26, died from multisystem failure as a likely consequence of long-term alcoholism.

Hepatitis B

Despite the availability of an effective vaccine, the incidence of hepatitis B throughout the nation has decreased only slightly over the years. Hepatitis B today is considered the prototype of bloodborne diseases because hepatitis B virus (HBV) is found in blood and body fluids. In 1991, 1958 cases of hepatitis B were reported in Texas, an increase of 9% over the 1990 case total of 1,789. Figure 33 illustrates the incidence rates of hepatitis B in individual counties throughout Texas for 1991. The diagnosis of hepatitis B is based on specific serology, utilizing tests to detect viral antigens and their corresponding antibodies. Virtually all (96%) cases were serologically diagnosed.

Figure 32

Reported Cases of Unspecified Hepatitis per 100,000 Population by Race/ethnicity and Sex, Texas, 1991

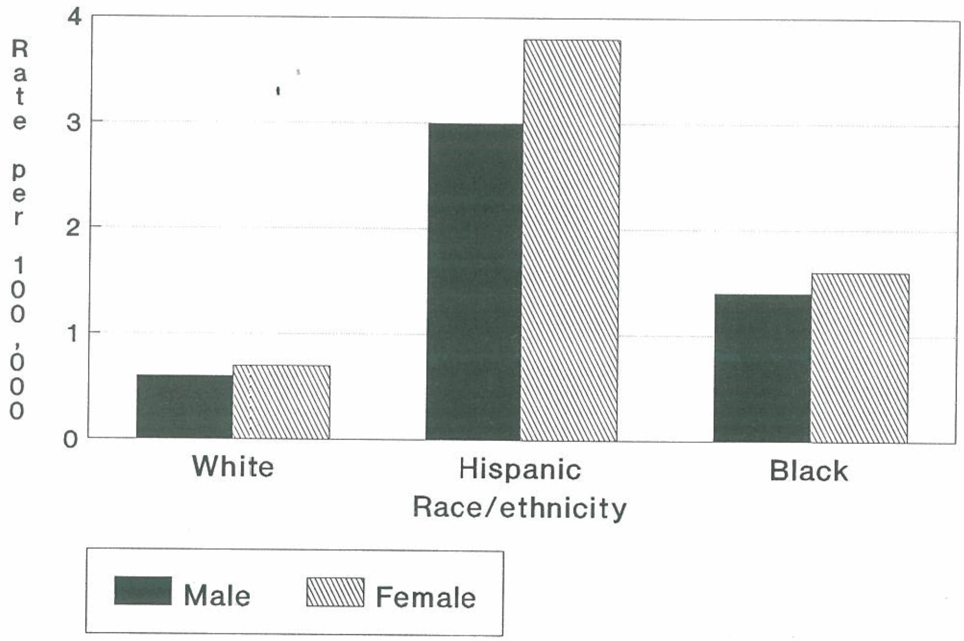


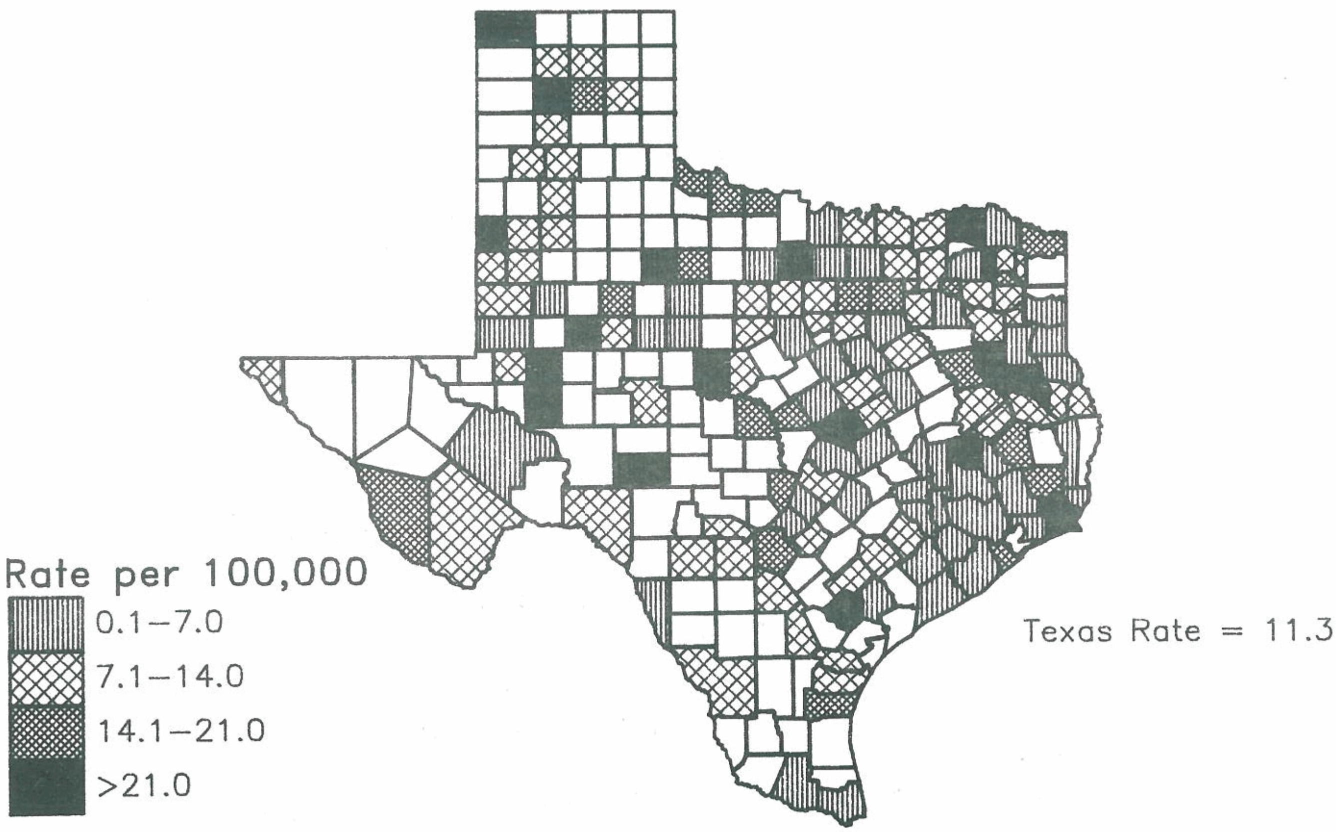
Table 7

Reported Cases of Hepatitis B
Texas, 1991

	1991	1990
Case Total	1958	1789
Counties Reporting	146	134
Incidence Rate	11.3	10.5
By Race/Ethnicity:		
White	6.9	6.1
Hispanic	7.6	10.4
Black	14.0	14.1
Male:Female Ratio	1.4:1	1.5:1
Deaths	21	22
Case-fatality Rate	1.1%	1.2%

Figure 33

Reported Cases of Hepatitis B in Texas per 100,000 Population by County of Residence, 1991

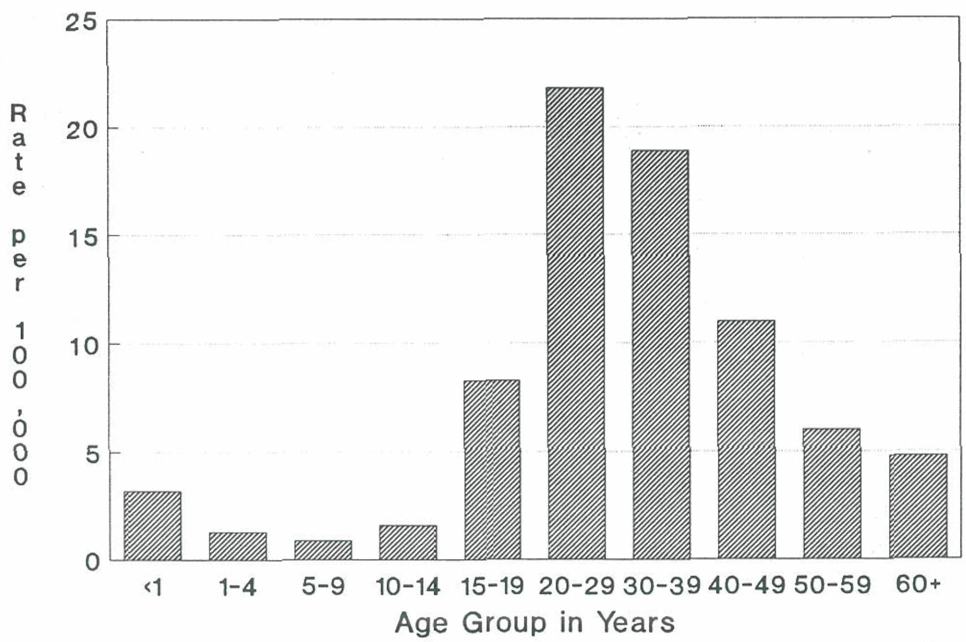


Unlike hepatitis A which primarily affects children, hepatitis B occurs more often among adults with high-risk behaviors such as IV drug use, unprotected sex--especially with multiple partners, and other percutaneous exposures to blood and body fluids. Infected mothers can transmit HBV to their infants during birth or during the perinatal period. Figure 34 illustrates the incidence rates of hepatitis B by age group. Clearly the group at greatest risk is adults 20-50 years of age. In each of the three main race/ethnic groups, individuals 20-59 years of age accounted for 88%-90% of the hepatitis B cases reported in 1991.

Throughout the years, hepatitis B has been reported more frequently in males than in females; this has been true for whites, blacks, and Hispanics. The incidence of hepatitis B among whites, black, and Hispanics differs significantly from that for hepatitis A. In 1991, the incidence rate for hepatitis A in Hispanics was 34.1 cases per 100,000 population, whereas the rate for hepatitis B in this same group was only 7.6 cases per 100,000. The group with the highest incidence for hepatitis B was blacks--14.0 cases per 100,000. The incidence rate for hepatitis A in blacks in 1991 was only 5.2 cases per 100,000. The incidence rates for hepatitis A and hepatitis B in whites were 6.9 and 8.2 cases per 100,000 population, respectively.

Figure 34

Reported Cases of Hepatitis B per 100,000 Population by Age Group, Texas, 1991



Of the 21 deaths reported as hepatitis B, 17 death certificates were reviewed. The deceased ranged in age from 18-89 years; mean age was 46 years. Thirteen of the

21 cases were male. The distribution of cases by race/ethnicity included 13 whites, 4 Hispanics, and 4 blacks. Eight-five percent of the certificates indicated that death occurred in a hospital, with the various manifestations of fulminant hepatitis as the principle cause of death. HIV infection was an underlying cause of death for two individuals.

Hepatitis D

Hepatitis D is another type of hepatitis that is spread through contact with infected blood and body fluids. The hepatitis D virus (HDV) is unique among the hepatitis viruses because it is defective in its replicative functions and requires active HBV infection to fill in the missing processes. An acute infection of both HBV and HDV concurrently is referred to as a "coinfection," but if an acute HDV infection occurs in a person who is a chronic carrier of hepatitis B, the patient's status is called a "superinfection." The symptoms of a superinfection are often mistaken for an exacerbation of the hepatitis B condition and are generally more severe.

Texas physicians are considering a diagnosis of hepatitis D more frequently when evaluating a patient who presents with unusually severe symptoms of hepatitis or if a patient indicates a history of IV drug use. Six cases of hepatitis D were reported to the Texas Department of Health in 1991; all were diagnosed serologically. Cases were distributed equally between males and females. Four out of the six were white, and race/ethnicity was listed as "unknown" for the remaining two. The ages of these six patients ranged from 28-38 years.

Two of the six cases were also reported for hepatitis B, indicating a coinfection status; the other four were hepatitis B carriers with superinfections. One of the coinfections, a 28-year-old white female, died of fulminant hepatitis; her death occurred approximately six weeks after the onset of her HBV and HDV infections. IV drug use was a risk factor in five out of the six cases.

Hepatitis C

Hepatitis C is a viral infection spread via direct contact with blood and body fluids. Prior to its identification in 1990, this viral infection of the liver was reported as non-A, non-B hepatitis and was usually associated with post-transfusion hepatitis. The hepatitis C virus (HCV) is an RNA virus and is a member of the *Flavivirus* family. Hepatitis C is a disease of variable severity; many infections in adults are asymptomatic or subclinical. As many as one-half of infected individuals may go on to develop a chronic carrier state, which often leads to cirrhosis or other manifestations of severe liver disease.

Table 8

Reported Cases of Hepatitis C
Texas, 1991

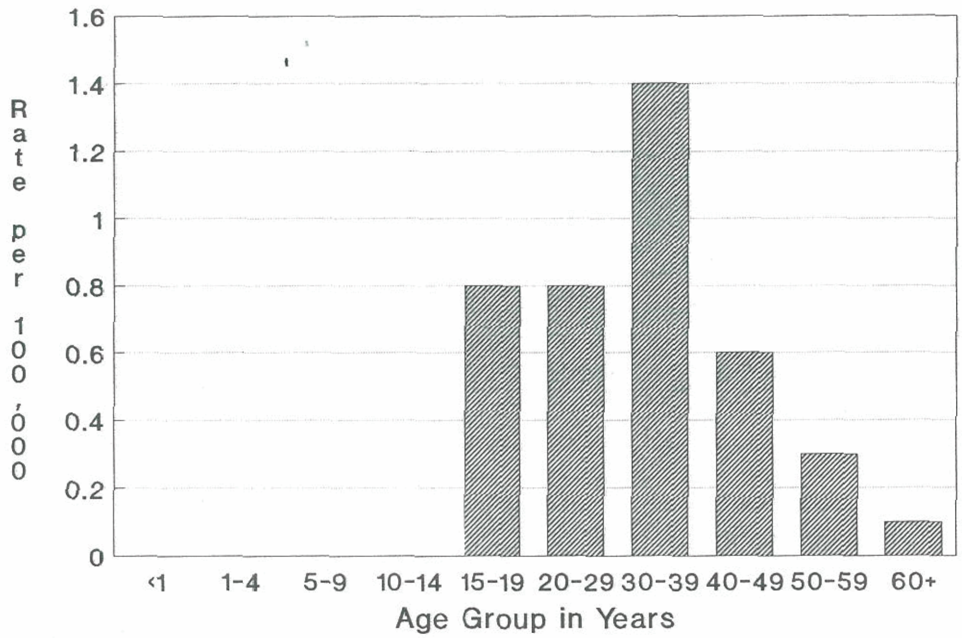
	1991	1990
Case Total	84	15
Counties Reporting	23	14
Incidence Rate	0.5	0.09
By Race/Ethnicity:		
White	0.4	0.09
Hispanic	0.5	0.05
Black	0.4	0.1
Male:Female Ratio	1.5:1	1.5:1
Deaths	1	0
Case-fatality Rate	1.2%	0.0%

The development and marketing of a serologic test for HCV antibody (anti-HCV) was met initially with enthusiasm, but subsequent experience with this test in Texas and elsewhere in the nation has been frustrating. The test is best used as a screening tool, especially in blood banks. Its value as a diagnostic indicator at this time is limited by several factors including its inability to differentiate acute, chronic, or past infections and the delay in seroconversion that sometimes occurs in the acute phase of infection. Consequently, the results of an anti-HCV test must be interpreted with caution. A diagnosis of acute hepatitis C cannot be made simply on the basis of a positive result for anti-HCV, nor can a negative result completely rule out hepatitis C in a patient with symptoms. A more comprehensive medical evaluation is needed, especially to identify chronic hepatitis C infection, which, unlike the acute stage of illness, is not a reportable condition in Texas.

Eighty-four cases of hepatitis C were reported in Texas for 1991. There were three cases of hepatitis C in males for every two cases reported in females. Over half (56%) of the cases were white, 29% were Hispanic, and 10% were black. There were no cases reported in children; the youngest case was 17 years old (Figure 35). Over 95% of the cases were reported based on a positive serology for anti-HCV.

Figure 35

Reported Cases of Hepatitis C per 100,000 Population
by Age Group, Texas, 1991



At this writing, a review of medical records for patients reported in 1991 with positive hepatitis C serologies was still in progress. Patients with acute and chronic HCV infections often had multiple risk factors. Fifty questionnaires on acute hepatitis C patients were analyzed for risk factor frequency. The five most frequently identified risk factors were 1) IV drug use, 48%; 2) alcohol & substance abuse, 42%; 3) history of hepatitis B infection, 22%; 4) other medical factors or percutaneous exposures, such as tattoos, 18%; and 5) contact with a hepatitis case through sex or drug use, 12%. Risk factors were not identified or listed for 20% of the cases. Alcohol/substance abuse and IV drug use were also the top two risk factors reported for those individuals with chronic hepatitis C. Of the patients determined to have chronic hepatitis C infections, many had been diagnosed with cirrhosis or chronic active hepatitis. This observation was consistent with findings in the scientific literature which document a strong association of positive anti-HCV status with the various forms of chronic liver disease.

Non-A, Non-B Hepatitis

Prior to 1990, the non-A, non-B hepatitis (NANB) reporting category was used for reporting cases of hepatitis that were neither hepatitis A nor B. This diagnosis generally required specific hepatitis serology to rule out A and B. The epidemiology of NANB showed an association with risk factors such as transfusion or IV drug use, thus demonstrating that the disease was for the most part another blood/body fluid-borne form of hepatitis.

NANB hepatitis was also thought to account for up to 20% of community-acquired hepatitis, a term used for cases with no identified risk factors. With the emergence of hepatitis C, we now know that this form of hepatitis accounts for a large proportion of the NANB activity both in the community and in blood banking. Screening donor units for hepatitis C may substantially reduce--perhaps up to 90%--of post-transfusion hepatitis. Studies have indicated, however, that this process will not totally eliminate transfusion-related hepatitis, thus implying that one, possibly two, other bloodborne hepatitis viruses exist. The epidemiology of NANB hepatitis, therefore, will no doubt be revised as new information is collected for hepatitis cases that are not hepatitis A, B, or C.

In 1991, 60 cases of NANB were reported in Texas (144 cases reported in the category minus the 84 cases identified as hepatitis C). As with hepatitis C, the vast majority of NANB cases (95%) were teenagers or adults. Two out of three cases were 20-49 years of age. Adult behaviors and risk factors, such as IV drug use and high-risk sexual practices, are still associated with NANB hepatitis transmission, especially among teens and young adults. In the past, transfusion was linked to the incidence of NANB among older adults. As blood banks continue to screen blood for hepatitis C the incidence of transfusion-transmitted hepatitis may be reduced significantly and the true incidence of the "other bloodborne NANB" will become apparent.

ZOONOTIC DISEASES

Brucellosis

The number of human brucellosis cases reported in Texas in 1991 (36 cases) doubled over that reported in 1990. Human brucellosis in Texas does not fit the national pattern of an occupationally associated zoonosis of adult males; 67% of Texas' 1991 cases were female, and only two cases (both male) reported exposures that could be considered occupational. As has been the experience in Texas for almost ten years, the overwhelming majority of cases in 1991 was Hispanic. Eighty-nine percent (32/36) of the Texas cases were Hispanic; the other four cases were white (3) and black (1). Blacks are rarely reported with brucellosis in Texas, and prior to 1991, the most recent case occurred in 1988.

Also emphasizing the non-occupational nature of brucellosis in Texas was the distribution of cases by gender; 24 cases (67%) reported in Texas in 1991 were female, 22 of whom were Hispanic and two were white. Both Hispanic and white female cases outnumbered males in their respective ethnic groups by ratios of 2:1.

As in previous years, the ages of Texas' cases varied widely ranging from 3-73 years; the median age of all cases was 30 years. Thirty-five percent of Hispanic cases with an age reported were less than 20 years old. The three white cases (two females, one male) ranged in age from 22-44 years. The black case was a 64-year-old male, the second-oldest case reported.

An exposure history was available for 61% (22/36) of the cases, and consumption of Mexican dairy products (primarily goat milk cheese) was specified for 86% (19/22), 18 of whom were Hispanic. Two of the cases who reported consumption of Mexican dairy products noted "cow" as the source of these dairy products. One of these two, however, had a *Brucella melitensis* infection suggesting that a dairy product of goat origin was the source of the infection.

One case, a 22-year-old, Hispanic female reported contact with cattle in Mexico as the possible source of her exposure. The type of contact was not specified, but may have included consumption of contaminated dairy products. The only white male case (22 years old) was employed as a veterinary assistant and had occupational exposure to large animals and bovine brucellosis vaccine on a regular basis. He denied any recognized needle-stick injuries while vaccinating cattle. The only black case reported exposure to swine which was supported by his *B. suis* infection. The Texas Animal Health Commission has investigated swine brucellosis among a number of "marginal" hog-raising operations in Dallas County (the case's county of residence).

Exposure information was not available for 39% (14/36) of the cases, 13 of whom were Hispanic. Seven (54%) of these Hispanic cases had confirmed *B. melitensis* infections strongly suggesting exposure through consumption of contaminated goat milk cheese from Mexico. The only non-Hispanic case in this group without good exposure histories was a 30-year-old female resident of Dallas County whose diagnosis was confirmed serologically; therefore, no *Brucella* species was identified to suggest a possible source of infection.

Twenty cases (56%) were confirmed serologically, and 16 cases (44%) were culture-confirmed, 15 from blood and one from cerebrospinal fluid (CSF). This latter case was diagnosed with rheumatoid arthritis in May 1991 and had a cervical diskectomy in December 1991; *B. melitensis* was cultured from her CSF at the time of surgery. This patient had a history of eating Mexican goat cheese. Fourteen (88%) of the cultures were confirmed as *B. melitensis* , one was confirmed as *B. suis*, and one was reported by the Centers for Disease Control laboratories as "*Brucella* species, not *B. canis*." The undifferentiated *Brucella* sp. was cultured from a 14-year-old Hispanic resident of Bexar County with no exposure history.

No common-source outbreaks of human brucellosis were reported in Texas in 1991, but there were three pairs of cases among family members--a mother and her daughter from Webb County, a brother and his sister from Hidalgo County, and two cousins from Dallas County. Consumption of Mexican dairy products was reported by all six of these cases, and although one cousin specified "cow" as the source of her Mexican dairy products, her cousin's infection was confirmed as *B. melitensis*. Brucellosis has the potential to be a foodborne disease in persons who might not otherwise be at risk of exposure. The recognition of one case should prompt questions about similar symptoms among other family members who may have eaten the same foods.

Only one death due to brucellosis was reported in Texas in 1991 resulting in a case-fatality rate of 2.8%. A 54-year-old Hispanic female who resided in Bexar County died four days after being hospitalized for "septic shock secondary to acute cholecystitis." The infection was not recognized until after her death. Although no exposure history was available, the identification of *B. melitensis* suggested that unpasteurized Mexican goat milk cheese was the probable source of her infection.

Ehrlichiosis

Ehrlichiosis is a bacterial disease transmitted to humans by the bite of an infected tick. The etiologic agent is *Ehrlichia chaffeensis*. Symptomatically the patients develop fever, headache, muscle aches, and malaise. The disease is common in the southeast and south central areas of the United States.

Two cases of human ehrlichiosis were reported in 1991. Both cases, a male and a female, resided in Travis County. Onsets of illness occurred in April or May. Both reported a tick bite prior to onset of illness. Both cases survived.

Murine Typhus

Murine typhus, caused by infection with *Rickettsia typhi*, is transmitted to man by the bite of an infected flea. The flea defecates during the feeding process. The scratching associated with the bite facilitates the inoculation of feces containing *R. typhi* into the bite site or skin abrasions. The disease in man is characterized by fever, headache, chills, myalgias, malaise, and a maculopapular rash. Since 1986, 182 cases have been reported in Texas. Two endemic foci, South Texas and West Central Texas, exist in Texas.

Twenty-two cases of murine typhus were reported in Texas in 1991. The patients resided in Nueces County (14), Hidalgo County (3), Nolan County (2), and one each in Cameron, Duval, and Parker counties. The patients, 10 males and 12 females, were 3-86 years of age. The patients had onset of illness from February through December. Twelve (54%) had onset in May-July. One patient, a 36-year-old, male died.

Psittacosis

Chlamydia psittaci is a pathogen of birds and mammals that is transmitted to man by inhaling the bacteria in fecal contaminated avian environments. The disease in man is characterized by fever, chills, sweating, muscle aches, and headache. Some cases also develop cough and pneumonia.

From 1986 through 1990, 11 cases of psittacosis were reported in Texas; four cases of psittacosis were reported in 1991. The cases ranged in age from 4-66 years. Two were males. One case resided in El Paso County. The others were three family members who resided in McLennan County. The McLennan County family, who cares for 25 parrots, cockatoos, and cockatiels, became ill after one parrot died in early November 1991. The El Paso County resident raises over 50 pigeons and owned one cockatiel. The cockatiel was diagnosed and treated for psittacosis prior to onset of illness of the owner.

Rocky Mountain Spotted Fever

Rocky Mountain spotted fever is bacterial infection caused by *Rickettsia rickettsii*. This bacterium is transmitted to man by the bite of infected ticks or by contamination of the skin with crushed tissues of infected ticks. Symptoms include fever, headache, and muscle aches followed in 2-3 days by a maculopapular rash. The annual number of reported cases has decreased from 108 cases in 1983 to only two cases in 1991. Both cases in 1991 were males, ages 27 and 53 years. The cases resided in Archer and Hill counties and had onset of illness in July and June, respectively.

Trichinosis

Trichinosis is a parasitic disease of some carnivorous and omnivorous animals. The disease is transmitted when undercooked or raw meat infected with *Trichinella spiralis*, an intestinal nematode, is consumed. Cases in Texas have usually been associated with the consumption of pork or pork products that have not been cooked at high enough temperatures or cooked long enough to kill the encysted larvae.

One case of trichinosis was reported in Texas during 1991; this was the first to have been reported in the state since 1986. The case was a 41-year-old, Hispanic male who resided in Amarillo (Potter County). Information was difficult to obtain because the patient did not speak English, but he did report that he had traveled to Mexico "last year." *T. spiralis* was identified in a muscle biopsy, but the patient could not recall eating any raw or undercooked meats.

Tularemia

Tularemia is a bacterial infection caused by *Francisella tularensis*. *F. tularensis* is transmitted to humans by direct contact with, or ingestion of, infected animals or their tissues, through the bite of infected ticks or other arthropods, from bites of infected animals, by inhalation of dust from contaminated environments, or by consumption of contaminated water. Tularemia in humans has a variety of clinical manifestations related to the route of transmission.

Three cases of tularemia were reported in Texas in 1991. The three cases, two females and one male, were 24, 58, and 66 years of age. Two were white and the third was Hispanic. The cases resided in Harris, Dallas, and Tarrant counties.

One case was a microbiologist at the laboratory where *F. tularensis* was cultured from the bronchial washing of another case. Inhalation of contaminated aerosols in the laboratory was the probable source of infection. The exposure for the other two cases was not determined.

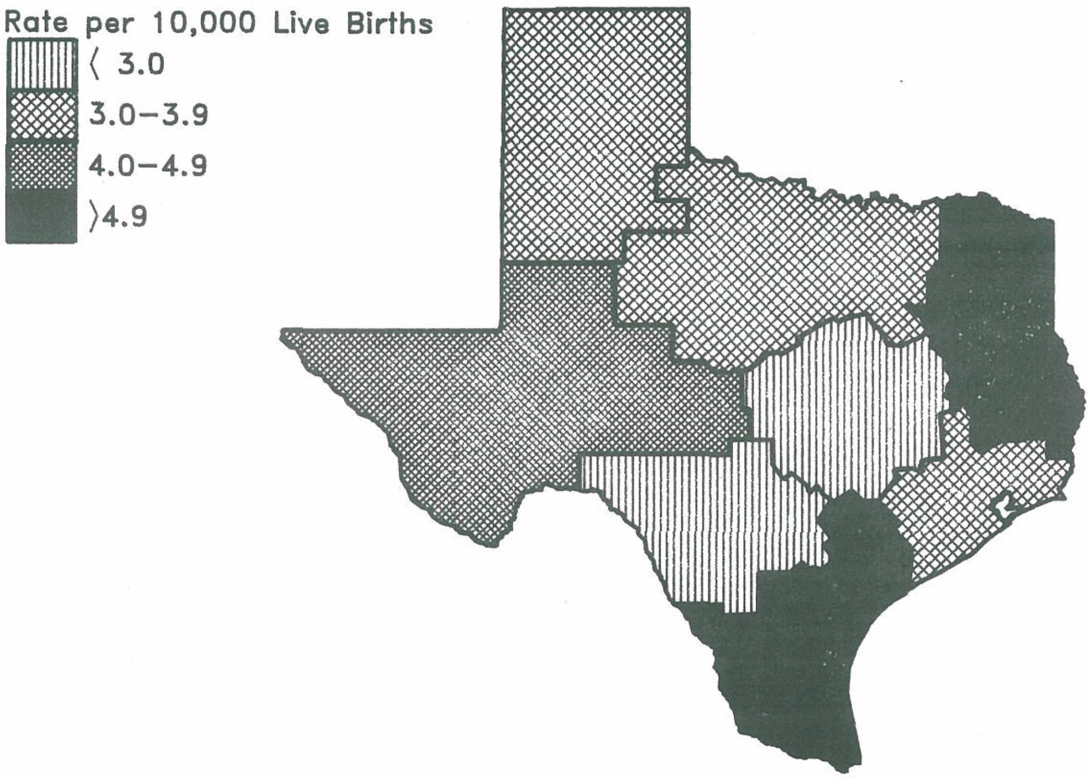
OTHER EPIDEMIOLOGIC/SURVEILLANCE STUDIES

ANENCEPHALIC BIRTHS, 1990

Anencephaly is a neural tube birth defect caused by abnormal development of the brain during early gestation. Anencephaly occurs when the neural tube fails to close at the cranium resulting in the partial or complete absence of brain mass and incomplete development of the skull (absence of the crown). Even though there is no birth defects registry in Texas, limited information about congenital malformations can be obtained from vital records. Because of the severity and 100% case-fatality rate of anencephaly, a high proportion of anencephalic births can be detected through surveillance of live birth, fetal death, and death certificates.

Figure 36

Prevalence of Anencephalic Births by Public Health Region, 1990

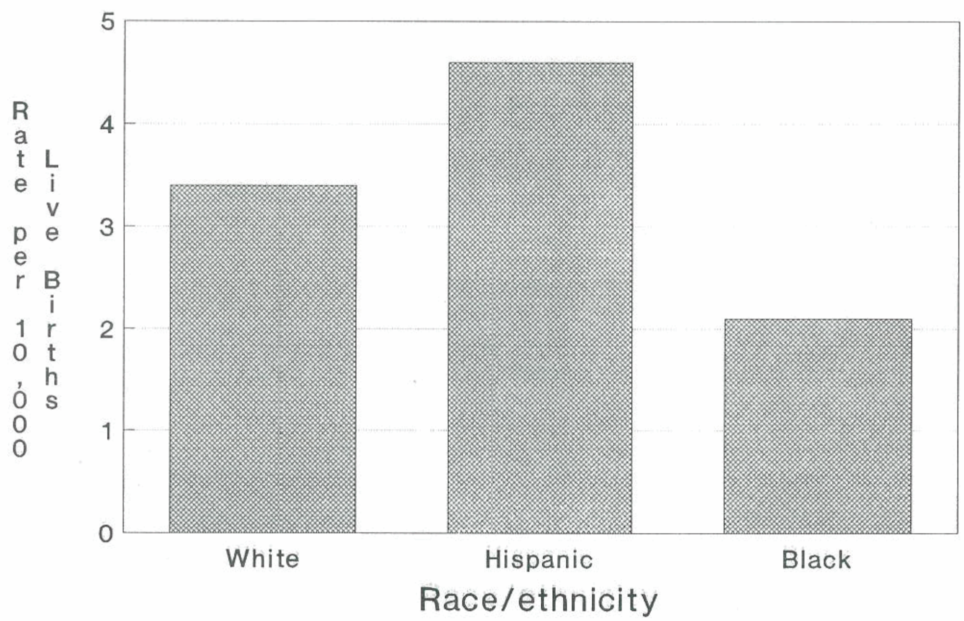


From these vital records, 120 anencephalic births were identified among 1990 Texas births. Approximately 61% of these births were detected through a review of fetal death certificates and the remainder from other death certificates. The prevalence of anencephaly in 1990 was 3.8 cases per 10,000 live births. Among the state's Public Health Regions (PHR), PHR 7 and PHR 8 had the highest rates with 5.8 cases per 10,000 live births (Figure 36).

Female births had a higher prevalence for this defect than male births, 4.8 and 2.8 per 10,000 live births, respectively. As in previous years, Hispanics had a higher prevalence rate for this defect than either blacks or whites (Figure 37).

Figure 37

Prevalence of Anencephaly
by Race/ethnicity of Births, Texas, 1990



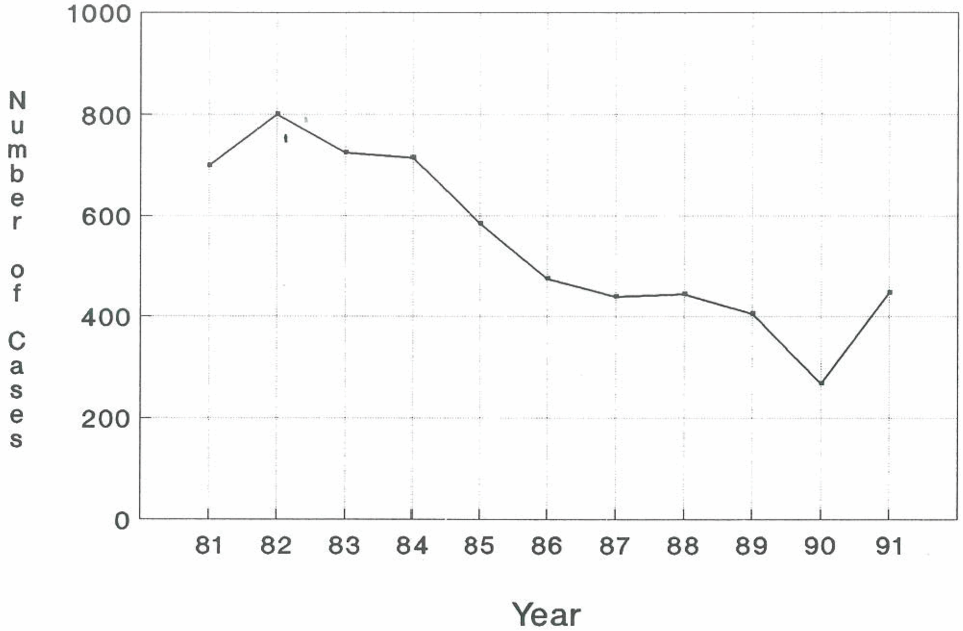
ANIMAL RABIES

Approximately 5% of the 9,598 animal specimens submitted to the Texas Department of Health were positive for rabies in 1991; 447 cases of animal rabies were confirmed statewide. This was a 67% increase over the 268 cases reported in 1990, and the highest number of animal rabies cases in Texas since 1986 (Figure 38).

Rabies in wildlife accounted for 82% of the total cases, and skunks continued to be the primary reservoir in most counties throughout Texas; skunks were responsible for almost half (47%) of the total cases statewide. During 1991, 209 skunks were found to be positive for rabies, a 79% increase over the 117 cases reported in 1990. Rabies in domestic animals (18% of the total) continued to be a cause of great concern because rabid domestic animals are five times as likely to come into contact

Figure 38

Confirmed Cases of Animal Rabies in Texas
1981-1981



with a human than is a rabid wild animal. Table 9 compares the numbers of domestic and wildlife rabies cases in different animal species for 1990 and 1991.

Table 9

Laboratory-confirmed Animal Rabies Cases in Texas
Domestic and Wild Animals, 1990-1991

DOMESTIC ANIMALS

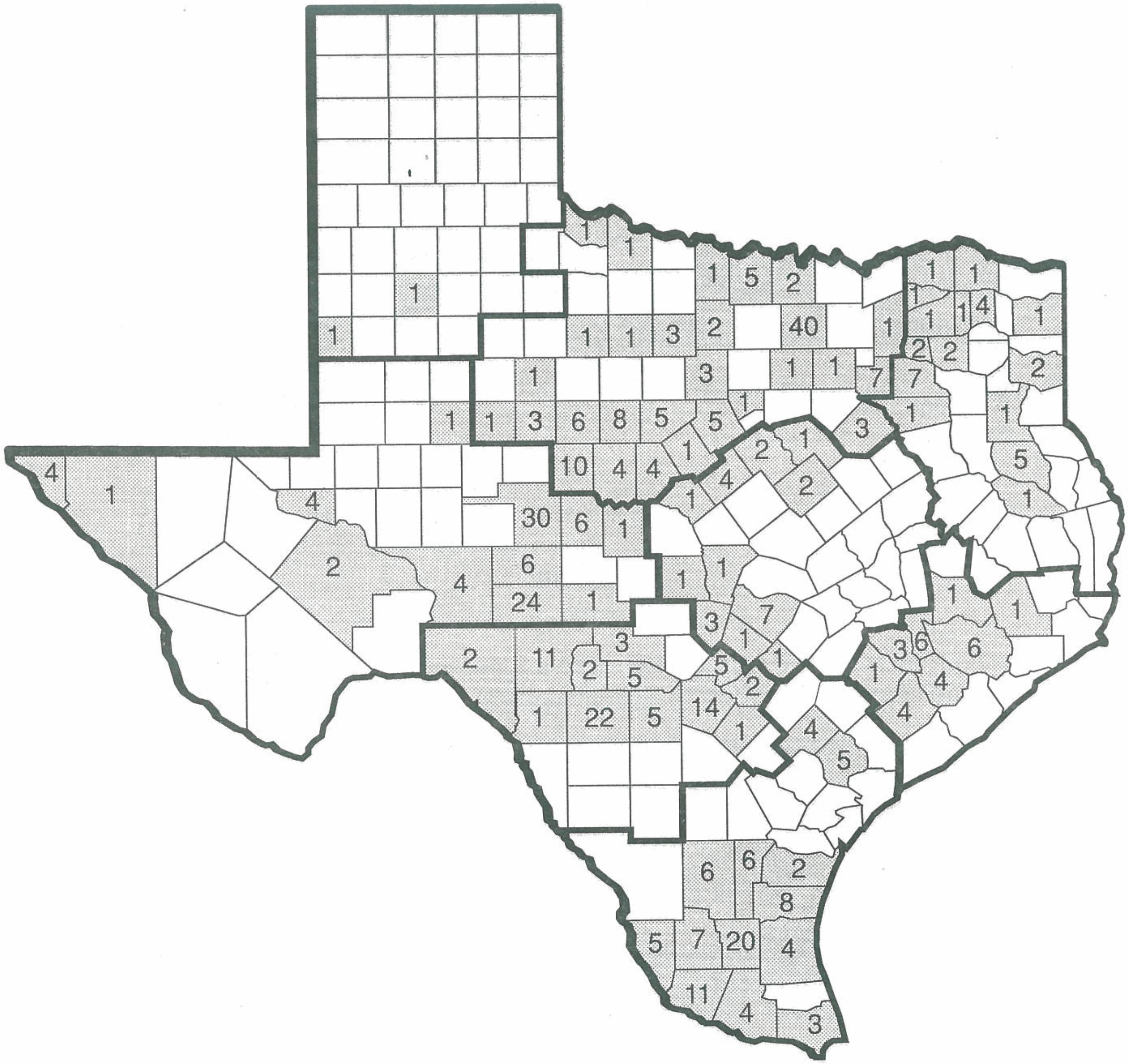
Species	1990	1991
Dogs	40	36
Cats	13	17
Cows	6	15
Horses	5	7
Goats	3	5
Sheep	1	0
TOTAL	68	80

WILD ANIMALS

Species	1990	1991
Skunks	117	209
Bats	50	59
Foxes	24	37
Coyotes	3	46
Raccoons	2	13
Other	4	3
TOTAL	200	367

Figure 39

Confirmed Cases of Animal Rabies (All Species)
by County in Texas, 1991

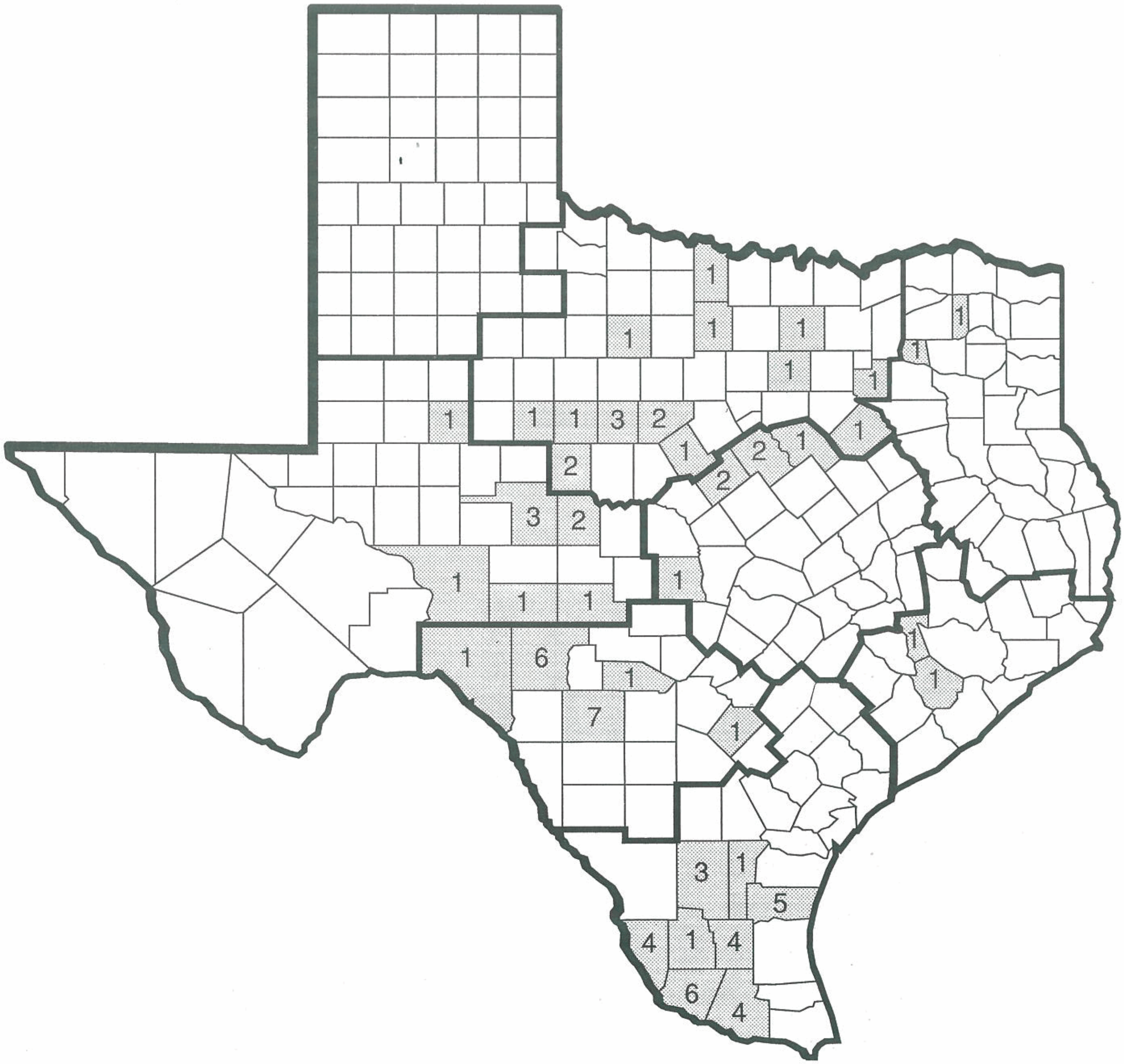


Rabies in wild or domestic animals occurred in 101 Texas counties in 1991. Figure 39 provides the numbers of cases reported from individual counties throughout the state. Denton County reported more rabid animals than any other county (39 skunks and one dog). Figure 40 illustrates counties reporting rabies in domestic animals.

The canine rabies epizootic in south Texas which began in 1988 continued throughout 1991. In August 1991, a 55-year-old woman from El Sauz in Starr County died of rabies. No definite animal exposure could be determined, but monoclonal antibody analysis showed that the woman was infected by the canine strain of rabies virus. Until March 1991, dog and coyote rabies had only been reported from Starr and Hidalgo counties. Since then, canine rabies in coyotes and dogs has spread 100 miles

Figure 40

Confirmed Cases of Animal Rabies (Domestic Species)
by County in Texas, 1991



northward and has been reported in Brooks, Duval, Jim Hogg, Jim Wells, Kenedy, Kleberg, Nueces, and Zapata counties. During 1991, 42 rabid coyotes and 25 rabid dogs were reported in these ten counties.

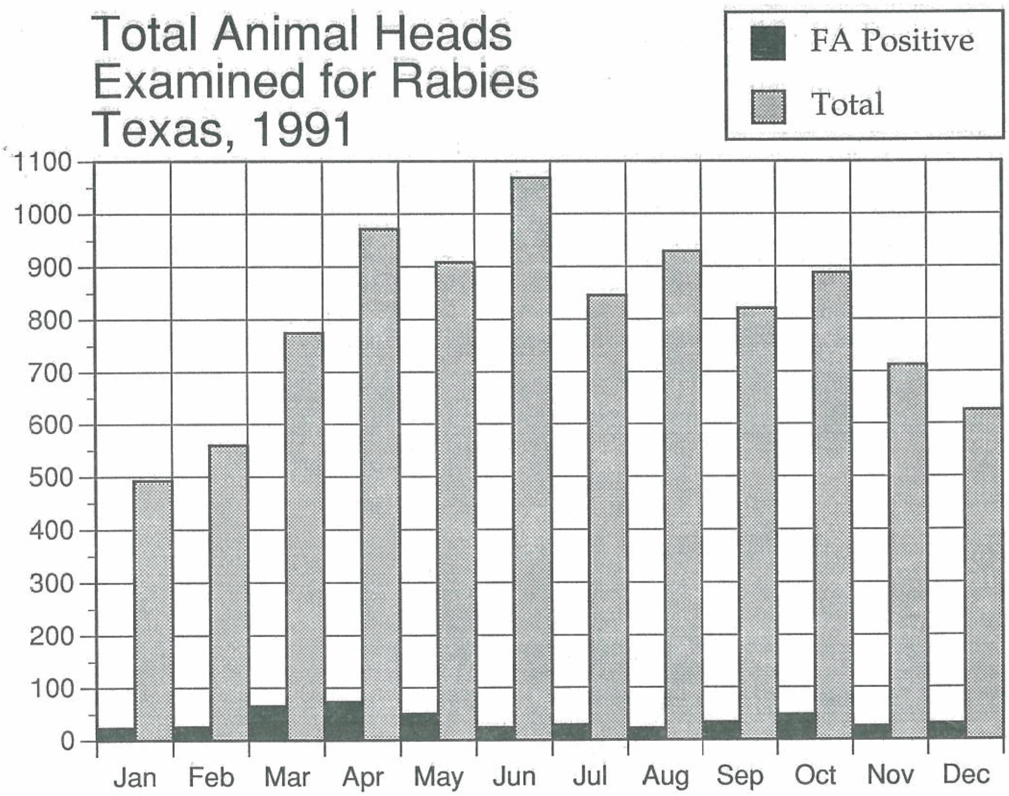
The fox rabies epizootic which began in September 1989 in Southwest Texas (Val Verde, Edwards, and Uvalde counties) continued through 1991 and spread into surrounding counties, extending as far north as Tom Green County and east to Bandera and Medina counties. Three rabid coyotes were reported from Medina County, and one rabid coyote was reported from adjacent Uvalde County. The four

Southwest Texas coyotes were tested and found to be infected with the fox rabies strain. There was no evidence that the canine strain of rabies virus found in South Texas coyotes was involved in this focus.

Rabies in Texas rodents is rare, however, a rabid porcupine was reported from Schleicher County in 1991. Monoclonal typing showed that it was infected with Texas fox strain of rabies virus.

The greatest number of animal rabies cases occurred in March and April, the reflection of the increase in the number of rabid skunks during this period (Figure 41).

Figure 41



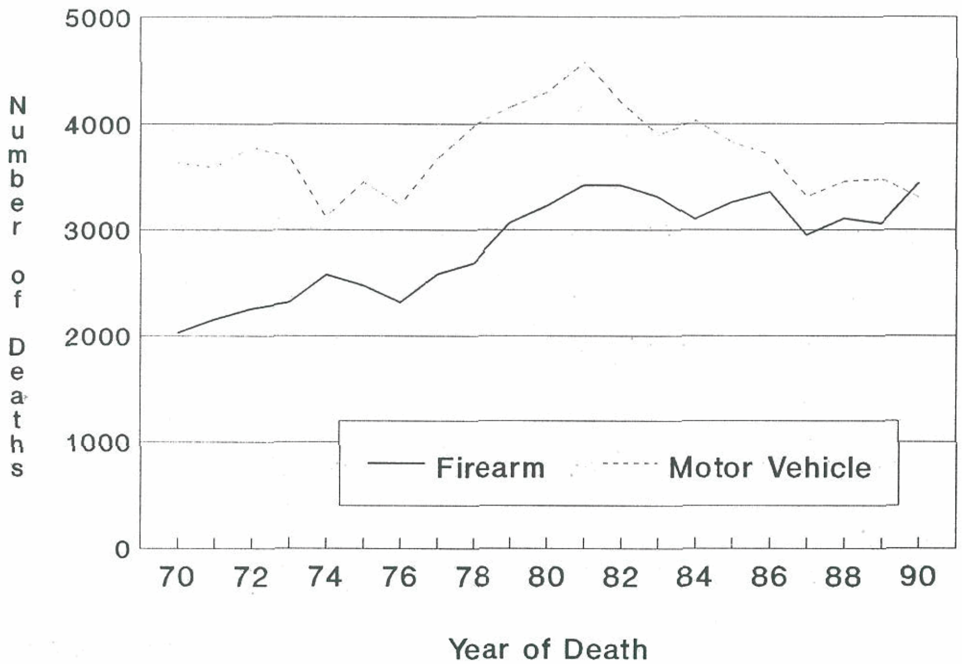
Month	FA Positive	Total
Jan	23	492
Feb	25	560
Mar	65	775
Apr	73	972
May	50	909
Jun	24	1,068
Jul	29	846
Aug	22	929
Sep	33	821
Oct	48	888
Nov	25	712
Dec	30	626
Total	447	9598

FIREARM-RELATED MORTALITY

In 1991, the Injury Control Program studied deaths of Texans who died from firearm-related injuries. Firearms surpassed motor vehicles as the leading cause of injury mortality in Texas during 1990, and Texas was the first state in the country to report this pattern to the Centers for Disease Control. Population estimates for this study were obtained from the Bureau of State Health Policy and Data Analysis.

Figure 42

Firearm and Motor Vehicle-related Deaths in Texas 1970-1990

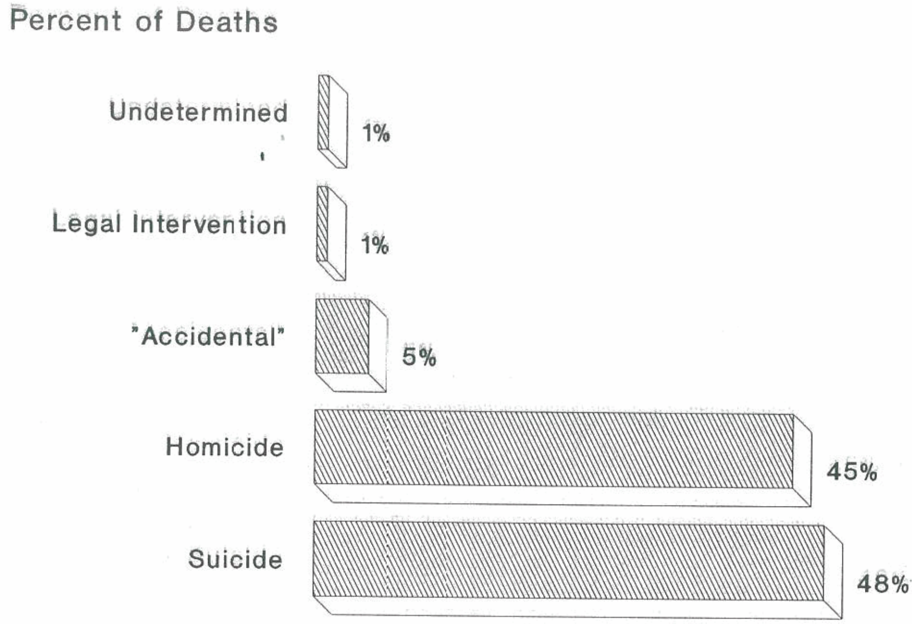


From 1964 through 1989, motor vehicle crashes had been the leading cause of injury mortality in Texas. But in 1990, there were 3,443 deaths related to firearms compared to 3,309 motor vehicle-related deaths (see Figure 42). Although motor vehicle mortality rates decreased by 42%, from 32.5 per 100,000 population in 1970 to 18.8 per 100,000 in 1990, the firearm-related death rate remained relatively constant.

From 1985 through 1990, 19,184 Texans died from firearm-related injuries. Of these deaths, 48% were suicides and 45% were homicides (see Figure 43). Males were five times more likely to die from firearm-related injuries than females, 31.3 per

Figure 43

Firearm-related Mortality in Texas
by Type of Injury, 1985-1990



100,000 for males compared with 6.2 per 100,000 for females. Persons 25-34 years of age had the highest age-specific rates (see Figure 44). Blacks were 1.9 times more likely to die from firearms than were Hispanics or whites. The firearm-related death rate was highest for black males (see Figure 45).

Figure 44

Firearm-related Mortality in Texas
by Age Group, 1985-1990

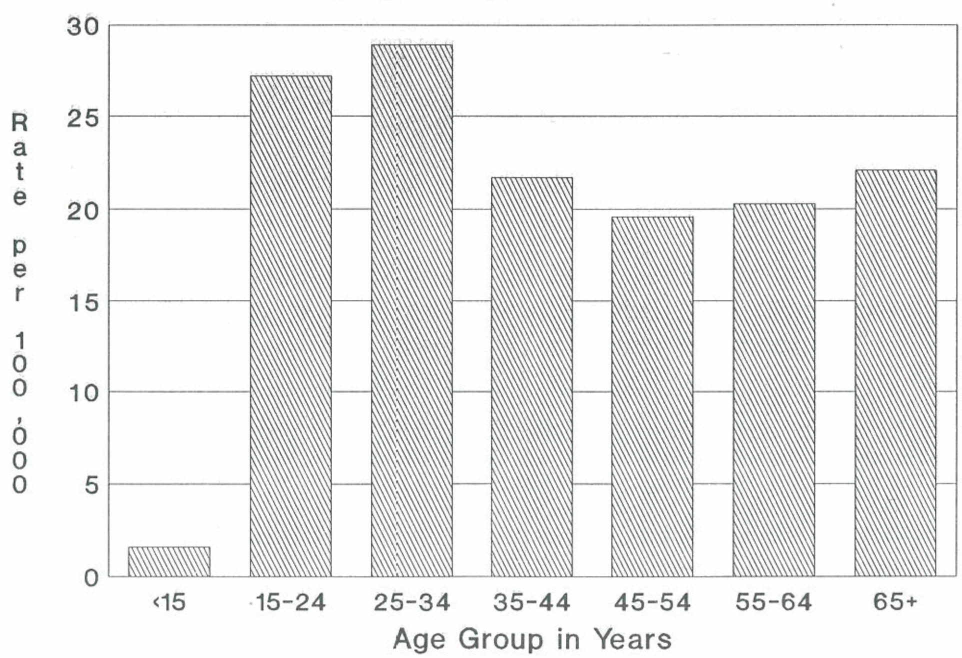
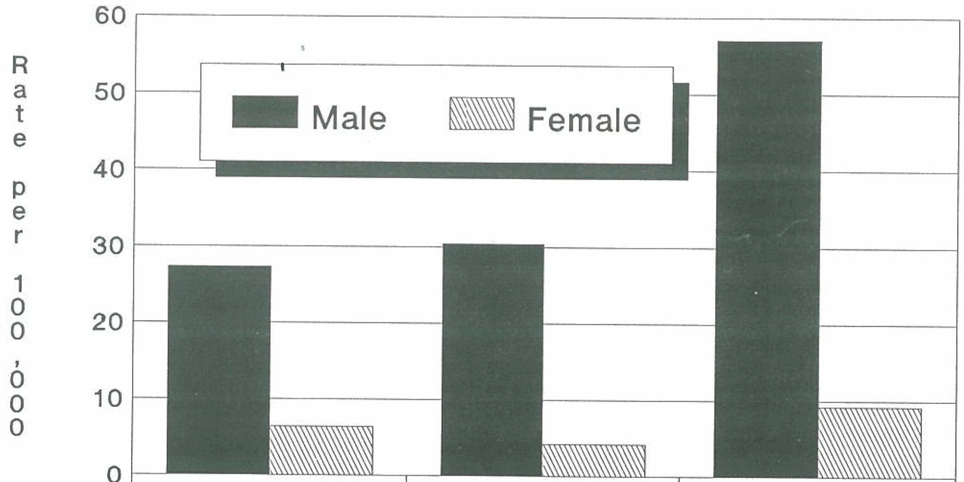


Figure 45

Firearm-related Mortality Death Rates in Texas
by Sex and Race/ethnicity, 1985-1990



	White	Hispanic	Black
Male	27.3	30.4	57.1
Female	6.4	4.2	9.2

A report to Congress in 1989 estimated that the average cost for a firearm fatality was $373,520. Thus, the economic impact of the 3,000+ annual firearm-related deaths in the state during 1990 was nearly $1.3 billion.

HEPATITIS A ALONG THE TEXAS-MEXICO BORDER

A significant percentage of hepatitis A morbidity is reported from counties along the Texas/Mexico border. There are 14 Texas counties actually on the Rio Grande and two whose county lines are within ten miles of the river. Despite the presence of large population centers at both ends of the border (El Paso and Harlingen/Brownsville area), the region is for the most part sparsely populated. The diversity of the land ranges from arid west Texas desert to the fertile farms in the lower Rio Grande Valley. The population in this area is predominately Hispanic--an estimated 75% of border county residents are Hispanic; in comparison, 22% of the Texas population are Hispanic.

Over the years, the incidence of hepatitis A in Texas has remained relatively stable, averaging around 15 cases per 100,000 population. Among Hispanics, however, incidence rates of hepatitis A have been increasing. Since 1984, rates among Hispanics have been twice as high as the rate for Texas, and the incidence of hepatitis A in Hispanics has been 4-6 times higher than that for whites or blacks (Figure 46). Hispanic children are especially at risk.

Figure 46

Reported Cases of Hepatitis A per 100,000 Population
Hispanics and All Race/ethnicities Compared, Texas, 1985-1991

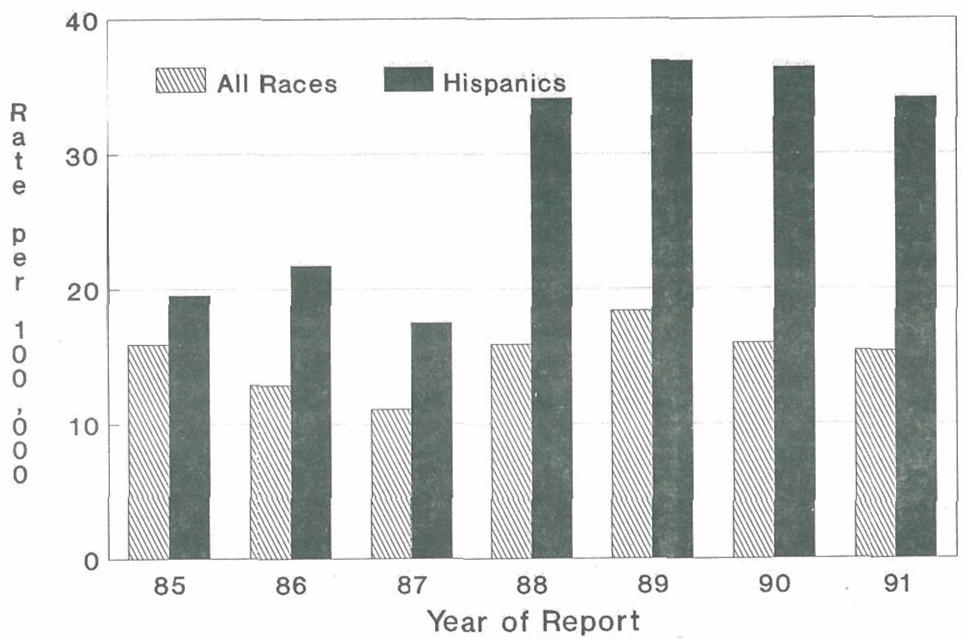
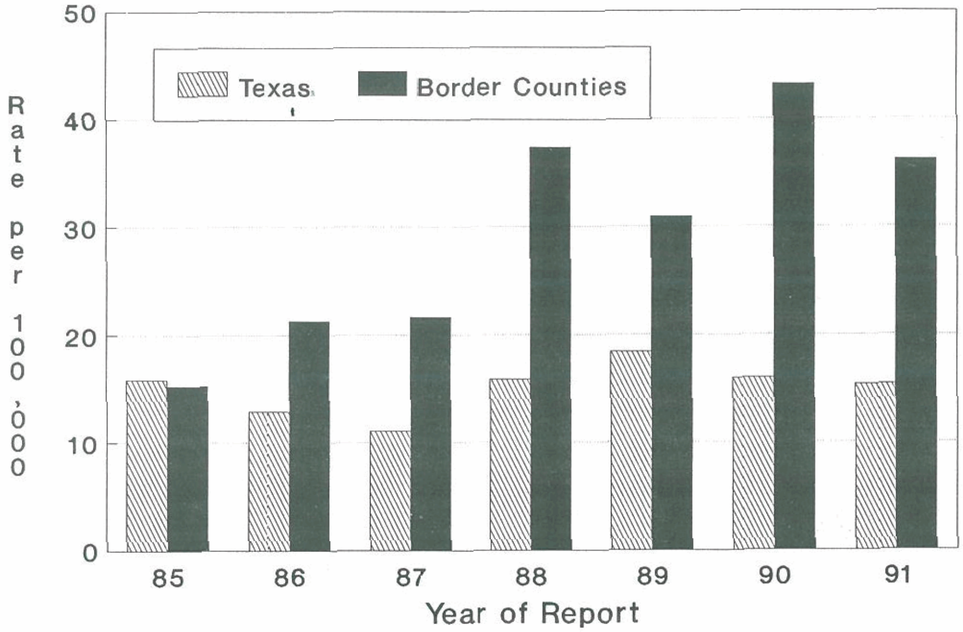


Figure 47 shows the incidence rates of hepatitis A along the border, comparing these to the rates for the state as a whole. The incidence of hepatitis A in the border counties has tripled over the last seven years. In 1991, the incidence of hepatitis A along the border was almost 2.5 times that for Texas as a whole. It is not surprising that hepatitis A virus activity in the Hispanic population along the border accounted for the vast majority (91%) of the hepatitis A morbidity in the region. Statewide, hepatitis A cases reported among Hispanics in 1991, for example, accounted for only 56% of the total.

Hepatitis A, along with other enteric diseases such as salmonellosis and shigellosis, can serve as an indicator of the level of general sanitation and environmental health within a community. Although hepatitis A is usually transmitted directly person to

Figure 47

Reported Cases of Hepatitis A per 100,000 Population
Border Counties and Texas Compared, 1987-1991



person, the virus can be spread to many people through fecally-contaminated food or water. In the border region, poor water hygiene and lack of potable water on either side of the river contribute to the problem. In the fast-growing, underdeveloped communities known as "colonias," water wells are often located in areas contaminated with raw sewage. Children play in these contaminated yards and often acquire hepatitis A. If these children attend school, they can in turn introduce the disease into communities. Use of contaminated water to wash fruits and vegetables and to prepare food is a problem, especially in Mexico. In past years, at least one large hepatitis A outbreak along the border was associated with the consumption of foods purchased from street vendors on the Mexico side.

The implications of this public health problem are obvious. Improvements to the environmental health of the border region, especially where water and food are concerned, are imperative. Fortunately, efforts are underway to direct money and other resources to start addressing problems such as the lack of potable water in the colonias. The incidence of hepatitis A along the border will be monitored during the coming years in an effort to document the effectiveness of these improvements.

INJURY MORTALITY IN TEXAS, 1990

Information provided by the Centers for Disease Control indicated that over 22,000 young people 0-19 years of age died of injuries in the United States in 1986. These injuries included mortality from motor vehicle crashes, suicide, homicide, drowning, fires, and burns. *It is estimated that 600,000 young people under the age of 20 years* are hospitalized each year for injuries, and nearly 16 million are treated for injuries in emergency departments.

In 1991, the Injury Control Program reviewed 1990 injury mortality data and found that 1,734 Texans under 20 years of age were killed by injuries. These deaths were both unintentional and intentional. In Texas, injuries were the leading cause of death for those 1-19 years of age. The leading cause of death in 1990 for infants under one year of age was sudden infant death syndrome (SIDS).

The five leading causes of injury mortality for individuals under 20 years of age in the state were motor vehicle crashes (39%), homicide (22%), suicide (11%), drowning (9%), and obstruction/suffocation (4%). The remaining 15% included deaths involving unintentional firearms injuries, fires, falls, poisonings, and other causes. There were 673 motor vehicle-related deaths, and 472 young people were killed by firearms, e.g. homicide, suicide. Together, motor vehicles and guns were responsible for 66% of all injury deaths in this age group. Figures 48-51 describe the different etiologies of injury deaths by age group.

Figure 48

Injury Mortality of Children < 5 Years of Age by Type of Injury, Texas, 1990

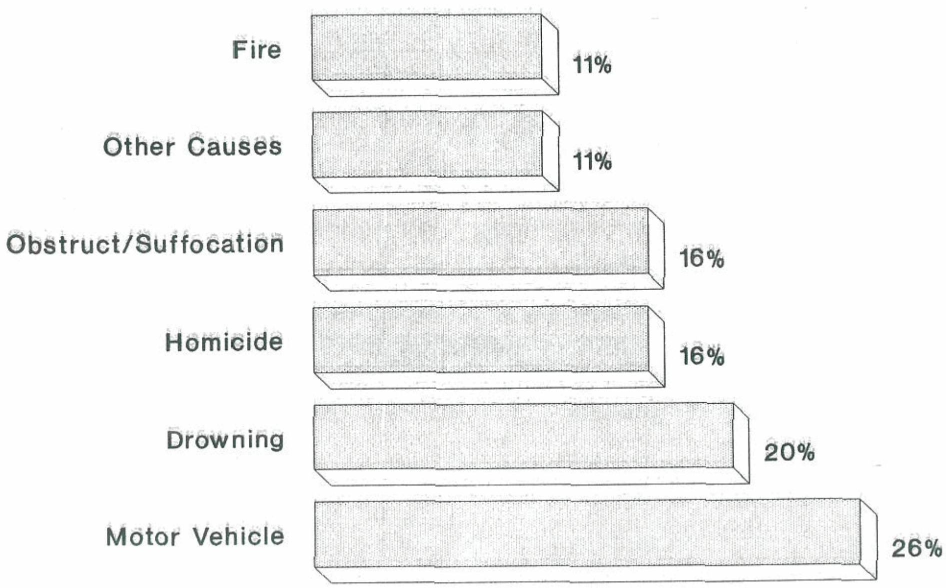


Figure 49

Mortality of Children 5-9 Years of Age
by Type of Injury, Texas, 1990

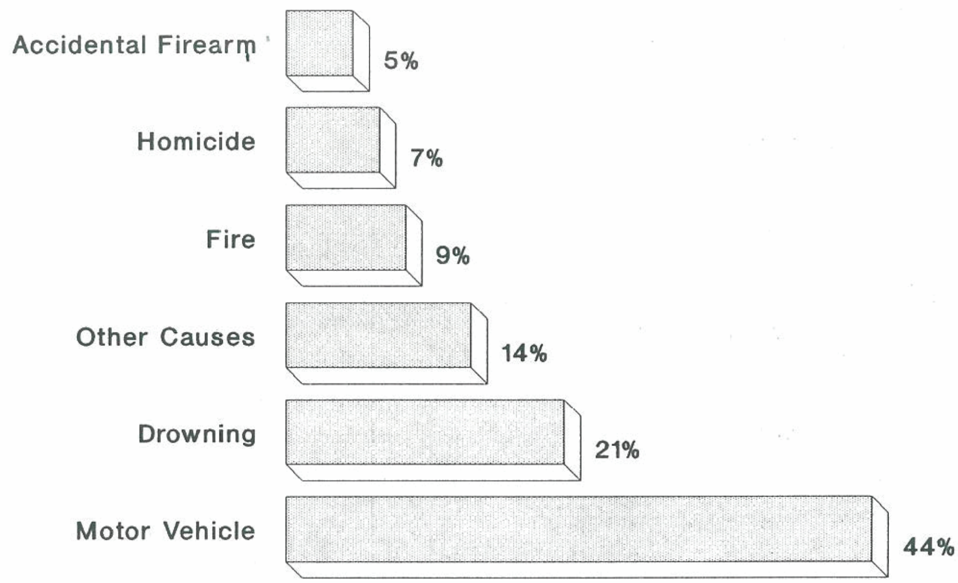


Figure 50

Injury Mortality of Children 10-14 Years of Age
by Type of Injury, Texas, 1990

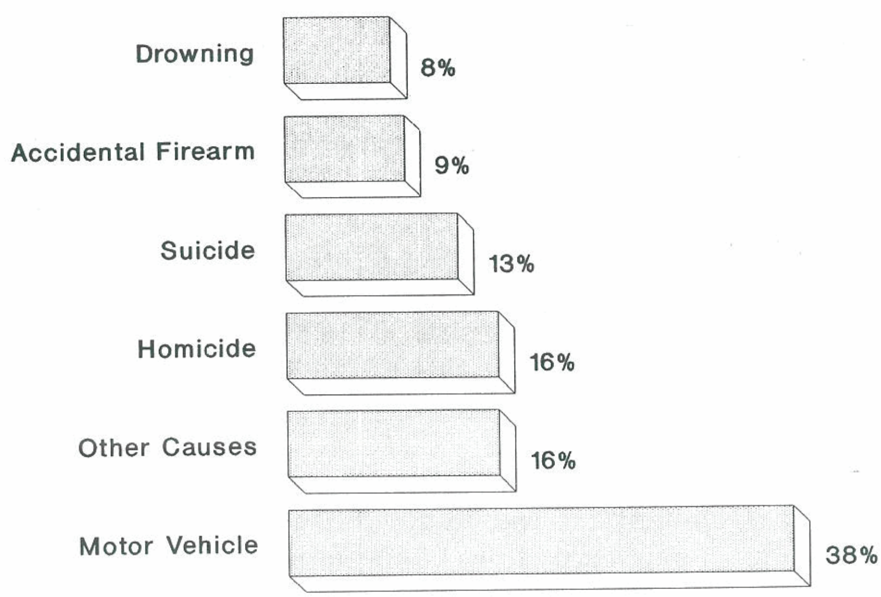
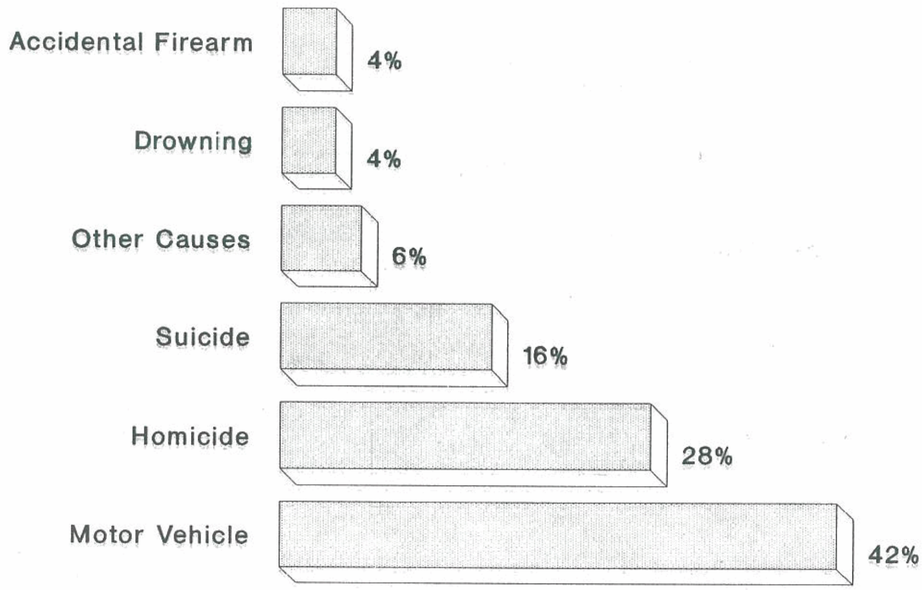


Figure 51

Injury Mortality of Individuals 15-19 Years of Age
by Type of Injury, Texas, 1990



KOPPERS SITE SURVEILLANCE PROJECT

From 1910 to 1961, the Koppers Company, Inc., located within the city limits of Texarkana (Bowie County), operated as a creosote wood treatment facility. In 1964, a subdivision was built over the northern portion of the site and is still occupied; the southern portion of the site was purchased by a sand and gravel company and operated from the late 1970s until mid-1984. Since 1980, results of environmental sampling have shown soil and ground water contamination of polycyclic aromatic hydrocarbons (PAHs), phenolic compounds, chlorinated dibenzodioxins, and chlorinated dibenzofurans over the entire site. In 1981, the Environmental Protection Agency (EPA) began their initial investigation of the site, and the site was placed on the National Priorities List (NPL) in 1984.

In April 1989, the Agency for Toxic Substances and Disease Registry (ATSDR) released a health assessment on the Koppers Company Superfund site, which concluded that long term exposures to PAH-contaminated surface soils and ground water could pose a significant health risk for residents living on the site. The report also noted that the Koppers Site located in Texarkana would be considered for a health study. As a result of the health assessment, the Texas Department of Health (TDH) explored the possibility of conducting a health study at the Koppers site, and in May 1990, TDH staff met with citizens of Texarkana to find out what their health concerns were and whether they would be willing to participate in such a study. The TDH proposal to conduct the study was funded by ATSDR, and the project began in January 1991. The purpose of the project was to determine whether residents of the Koppers site and adjacent area were experiencing a significantly higher incidence of health problems possibly related to site contaminants than a similar non-exposed community.

Seventy-nine homes on the Koppers Company site and approximately 50 homes adjacent to the site were included in the study area. A comparison neighborhood approximately 1.5 miles southwest of the Koppers Company site with similar characteristics was also selected for study. A questionnaire developed by ATSDR was used to interview residents of both study areas. Questionnaires were administered in person by door-to-door interviewers and included demographic information, as well as economic indicators, lifestyle, residential, occupational, and health characteristics. Exposure questions and environmental concerns of participants were also assessed during the interviews. Medical release forms were obtained from residents who stated they had experienced a health problem such as cancer or adverse reproductive outcome.

Study Results

Analyses of data after the first year of the study revealed no differences between the communities with respect to age, sex, race, education and income, smoking history, alcohol history, or residential and employment histories. There were, however, several disease outcomes which were found to be significantly different; these data are presented in Table 10. After adjustments for date of diagnosis and heterogeneity of reported diagnoses, further analyses of disease outcomes were limited to skin rashes and chronic bronchitis.

Skin Rashes

After adjusting for age differences between the two communities, Koppers residents 11 years of age or older (both male and female) still had a higher percentage of skin rashes than did those in the comparison neighborhood. Koppers residents were also three times more likely to report rashes after adjusting for occupational exposure to PAHs.

Among Koppers residents, there were no differences in reports of skin rashes by age group, sex, or smoking status. Residents were grouped by exposure opportunities to determine which exposures were associated with rashes. Residents who reported having contact with water from Wagner Creek were twice as likely to develop rashes, and residents who were smokers/ever smokers were three times as likely to report a

Table 10

Significant Disease Outcomes by Community*
Koppers Site Surveillance Project
Texarkana, Texas

Disease Outcome	Koppers N (%)	Comparison N (%)	p-value
Skin rashes			
yes	58 (27.9)	10 (6.5)	0.0000003
no	150 (72.1)	144 (93.5)	
Chronic Bronchitis			
yes	24 (11.5)	8 (3.9)	0.004
no	185 (88.5)	198 (96.1)	
Anemia			
yes	25 (11.9)	40 (19.0)	0.05
no	185 (88.1)	171 (81.0)	
Urinary disease			
yes	27 (12.9)	10 (4.7)	0.003
no	182 (87.1)	201 (95.3)	
Liver disease			
yes	11 (5.3)	1 (0.5)	0.003
no	198 (94.7)	210 (99.5)	

* Adjusted by date of diagnosis. Unknown responses excluded.

rash after having contact with the water from Wagner Creek. Adults 31-40 years of age who were exposed to water from Wagner Creek were five times more likely to report skin rashes.

Koppers children under 11 years of age had a higher percentage of skin rashes than did children from the comparison neighborhood. Koppers area children were grouped by exposure opportunities to determine which exposures were associated with rashes, and those who took food or a bottle outside with them were six times more likely to develop rashes. Children who took a favorite blanket or stuffed toy outside to play were two and a half times more likely to develop a rash.

Chronic Bronchitis

Koppers residents eleven years of age or older reported a higher percentage of chronic bronchitis. Thirteen percent of Koppers females reported chronic bronchitis compared to three percent of the comparison area women. Reports of chronic bronchitis did not differ significantly by community when residents were grouped by age or work exposure to PAHs.

Among Koppers area residents, there were no significant differences in the reports of chronic bronchitis by age group, sex, or smoking status. Koppers males reported a higher percentage of chronic bronchitis than Koppers females, but the difference was not significant. Koppers area residents were also grouped by exposure opportunity to determine which exposures were related to a higher percentage of chronic bronchitis. Residents who had a soil/sod protective barrier placed in their yard reported a higher prevalence of chronic bronchitis, but the difference was of borderline statistical significance.

Although the Koppers area children under 11 years of age experienced twice as much chronic bronchitis, the difference was not statistically significant. When data were analyzed by exposure opportunity, children who had dogs or cats coming in or out of their homes were five and a half times more likely to have chronic bronchitis. Taking a favorite blanket or stuffed toy outside to play was related to a higher percentage of chronic bronchitis; this finding, however, was of borderline significance.

Reproductive Outcomes

A total of 184 women (16 years and older) were interviewed. This included 91 women in the Koppers area and 93 women in the comparison neighborhood. The two groups of women were similar with respect to age, length of residence, smoking and drinking histories, and health characteristics that might impact their pregnancy outcomes.

The women in the Koppers area reported 270 pregnancies with 226 live births, and the comparison neighborhood women reported 332 pregnancies with 275 live births. Analyses of data revealed no significant differences in the average number of pregnancies or live births by group. Koppers women had an average of 3.0 pregnancies and 2.5 live births per resident compared to 3.6 pregnancies and 3.0 live births per resident in the comparison neighborhood. Table 11 shows the reports of adverse reproductive outcomes among both groups. Although the percentages of premature and low birth weight births were slightly higher among Koppers area women, the percentages of reported adverse reproductive outcomes (premature births, low birth weight, spontaneous abortions, and birth defects) were not statistically different in the two neighborhood areas. No differences were found in the percentages of premature births, low birth weight births, spontaneous abortions, still births, or birth defects by community when data were analyzed by the mothers' ages.

Table 11

Reproductive Outcomes Among Women* Living in Koppers Area and Comparison Neighborhoods

Outcome	Koppers Residents N	(%)	Comparison Group N	(%)	p-value
Premature births	13	(5.8)	8	(2.9)	0.11
Low birth weight (< 5 1/2 lbs)	15	(6.6)	11	(4.0)	0.19
Spontaneous abortions	36	(13.3)	43	(13.0)	0.89
Stillbirths	4	(1.8)	9	(3.3)	0.29
Birth defects	3	(1.3)	9	(3.3)	0.16
Total Live Births	226		275		
Total Pregnancies	270		332		

* Women ages 16 years and older

Sixteen (19%) of the Koppers area women reported problems becoming pregnant for at least one year compared to 5 (6%) women in the comparison neighborhood. The *average number of pregnancies* differed significantly between the women who had difficulty becoming pregnant and those who did not. Among women reporting difficulties becoming pregnant, Koppers women had significantly fewer pregnancies than comparison women.

Vital Records Review

In addition to individual interviews, vital records of residents in the study area, as well as those in the comparison neighborhood were also reviewed. Death and fetal death certificates from 1981-1990 were obtained from the TDH Bureau of Vital Statistics. Death certificates indicating a primary, secondary, or underlying cause of death from cancer, as well as all fetal death certificates were studied During this 10-year period, 11 deaths related to various types of cancer were identified in the Koppers area, and 10 cancer deaths were identified for the comparison area. One fetal death from each community was identified.

Discussion

A major limitation of the study was the inability to verify diseases by examining medical records. Although medical releases were requested from residents, very few medical records have actually been received by the TDH; only 31% of the medical releases requested have been returned and forwarded on to physicians and health care facilities, and only 19% (6/32) of the reported skin rashes have been evaluated and confirmed.

Concern that environmental problems may be impacting health may have also led to differences in reporting health problems between the Koppers and comparison groups. Since the Koppers area has'been the focus of considerable attention from the media and citizen and environmental action groups, residents from this area may be more likely to report or recall certain health conditions. Several studies have found that citizens who believe their health problems are related to chemical or environmental hazards in their neighborhood may have a better recollection of health problems than citizens who do not have the same concerns. About 47% of Koppers area residents reported that their health problems were related to chemical or environmental hazards in their neighborhood compared to 3% in the comparison neighborhood. Such a belief itself might produce a better recollection of health problems from Koppers area residents. It is often difficult to determine whether the concern of living on or near a hazardous waste site influences the reporting of disease rather than the long term exposure from on-site contamination. Even with adjustments for these concerns and beliefs, Koppers area residents were more likely to report skin problems. Furthermore, Koppers women who reported having problems becoming pregnant had significantly fewer pregnancies than comparison women who reported this problem. Concern about chemicals around home were not related to average number of pregnancies.

Another limitation of the study was the method in which information was obtained for dates of normal live births and the mother's ages during these pregnancies. Because the core questionnaire did not contain specific questions for each normal pregnancy (i.e. date of birth, mother's age), it was not possible to compare rates for adverse reproductive outcomes before and after moving into the respective neighborhoods.

RELAPSING FEVER

Tickborne relapsing fever is caused by bacteria of the genus *Borrelia*. In the United States infections with *Borrelia hermsii, Borrelia parkerii,* and *Borrelia turicatae* have been reported. Relapsing fever is transmitted to humans by the bite of ticks of the genus *Ornithodoros*. Relapsing fever is characterized by episodes of fever, headache, and sweats. Febrile episodes last from 3-5 days with an afebrile period between. Tetracyclines and penicillins are used in the treatment of relapsing fever. Diagnosis is made by examination for borreliae in peripheral blood smears. Tickborne relapsing fever is primarily occurs in the western United States.

On November 17, 1990, eleven persons searching for arrowheads visited a dry cave in West Texas where they received multiple tick bites. During following three weeks, several members of the party developed an acute febrile illness characterized by headache, myalgias, and photophobia. Two persons who developed facial paralysis eventually sought medical care. A preliminary diagnosis of Lyme borreliosis was made based on a history of tick exposure, facial paralysis, and positive Lyme borreliosis serological test results. Initial environmental investigations at the cave, however, failed to reveal any of the known Texas vectors of Lyme borreliosis.

Five of the eleven persons at the cave met a case definition for relapsing fever as defined by an acute febrile illness recurring after a period of at least 24 hours without fever within a month of visiting the cave. The cases ranged in age from 30-38 years. All were white, and three were female. Onsets of illness occurred 4-14 days following exposure to the cave. The cases experienced rigors with fever to 40°C (100%), nausea and vomiting (20%), headache (100%), stiff neck (80%), photophobia (60%), myalgias (100%), and arthralgias (100%) lasting from 5-11 days. Four patients developed erythematous rashes. All recovered for 2-3 days before a recurrence of similar symptoms. During the recurrence, two cases developed unilateral facial paralysis, one of whom experienced an additional febrile recurrence during which bilateral facial paralysis developed.

Physical examination and laboratory evaluation was performed on three patients soon after becoming ill. One case with facial paralysis developed positive Kernig's and Brudzinski's signs on physical examination approximately one day after the third febrile episode. His cerebrospinal fluid (CSF) was pleocytic with low glucose, elevated protein, and indeterminate EIA for Lyme borreliosis. Erythematous rashes, noted on two cases during their second febrile episodes, were generalized on one and discrete, circular lesions on the other. One patient developed a first degree atrioventricular block with early repolarization three weeks after the onset of illness.

All ten members of the party entered the cave on November 17, 1990. Although the cave extended into the mountainside for approximately ten meters, most time was spent in the first three meters digging and sifting dirt from the cave floor. Members of the party described the cave-floor as "moving" with ticks within 15 minutes of their entry. All members of the party received tick bites. Four of the five persons who recalled receiving more than ten tick bites became ill compared to one of five persons recalling fewer tick bites. Five of the six persons who stayed in the cave more than one hour became ill compared to none of the four persons staying less than one hour.

Sera from all five case-patients were positive for *Borrelia* spp. infection compared to none of the sera from four other members of the party. Serologic tests were positive for both *B. burgdorferi* and *Borrelia turicatae*. All 127 ticks collected from the cave were identified as *Ornithodoros turicata*. Of 97 ticks examined using DFA, three adults and three nymphs were infected with Borrelia spp. Mice inoculated with tick tissue developed spirochetemia on days 5, 12, 13, and 14. In addition, spirochetes were isolated from mice inoculated with tick tissue from the six infected ticks identified by direct examination.

TRAUMATIC SPINAL CORD INJURIES

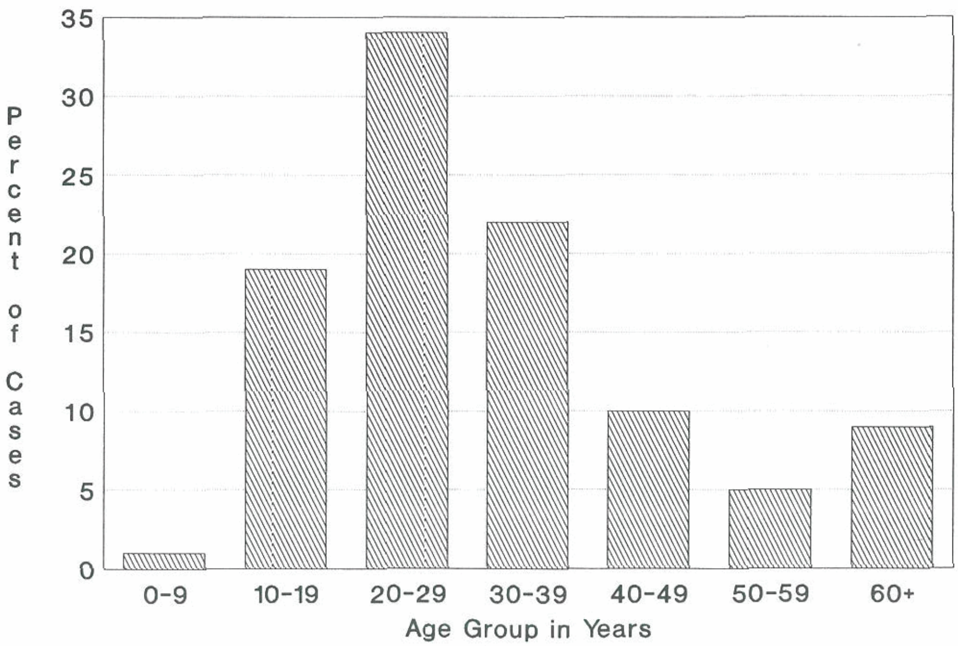
Each year, an estimated 10,000-20,000 Americans sustain traumatic spinal cord injuries (SCIs). These injuries are particularly devastating due to: 1) the permanent nature of such injuries, 2) the relatively young age of the victims, and 3) the high costs of both acute and long-term care.

On January 1, 1991, the Texas Department of Health's Injury Control Program (ICP) began collecting voluntary, confidential reports of traumatic SCIs from 38 sentinels. These facilities included 13 acute-care hospitals and 22 rehabilitation facilities located throughout the state. Health departments from three neighboring states (Colorado, Louisiana, and Oklahoma) also contributed reports on Texas residents injured or treated in those states.

During 1991, the ICP received reports on a total of 275 Texans who incurred traumatic spinal cord injuries. Reports on ten non-Texas residents injured in Texas during 1991 were also received, but are not included in this summary. Case reports were received from 27 (71%) of the 38 sentinels. By linking reports, the surveillance system was able to track 27 cases transferred from acute-care hospitals to subsequent inpatient rehabilitation facilities.

Figure 52

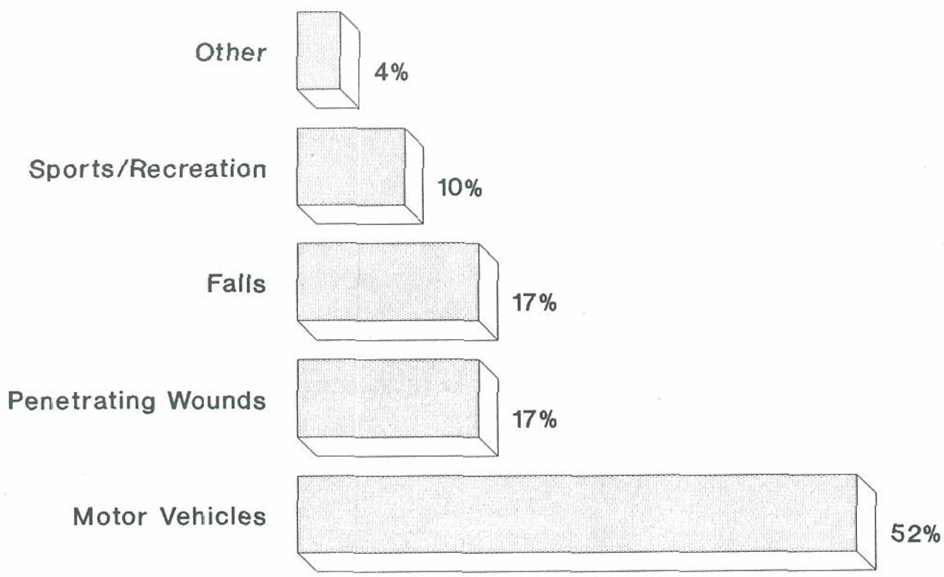
Reported Spinal Cord Injuries in Texas by Age Group, 1991



Of the 275 Texans who sustained traumatic spinal cord injuries, 223 (81%) were male. The reported race/ethnicity included: 159 (58%) white, 64 (23%) Hispanic, 43 (16%) black, 6 (2%) Asian, and 3 (1%) other. Although the ages ranged from 2-94 years, 209 (76%) were under 40 years of age (Figure 52).

Figure 53

Etiology of Reported Spinal Cord Injuries
Texas, 1991



One hundred forty-four (52%) of the injuries were motor vehicle-related (Figure 53). These involved 96 individuals injured in automobiles, 16 on motorcycles, 14 in pickup trucks, and 3 on all-terrain vehicles (ATVs); 9 pedestrians and 2 bicyclists injured by vehicles; and 4 others involving commercial, farm, and recreational vehicles.

Available information indicated that 68% (62/91) of the cases injured in automobiles and pickup trucks were not wearing seat belts, and 27% (3/11) of those injured on motorcycles were unhelmeted. Of the three persons injured on ATVs, two were unhelmeted; helmet use was unknown for the third case.

The etiologies of the 131 non-motor vehicle related cases were: 47 (17%) by penetrating wounds, 45 (17%) by falls, 28 (10%) by sports/recreation, and 11 (4%) by miscellaneous causes. Forty-five (96%) of the penetrating wounds were gun-related; two were knife-related.

Information about alcohol involvement was available for 241 (88%) of the 275 cases; 61 (25%) of these were alcohol-related. Information about drug involvement was reported for 215 (78%) of the cases; 21 (10%) of these cases were drug-related. The drug mentioned most often was cocaine.

Information on whether the injury occurred on the job was collected on 228 (83%) individuals. Thirty-two (14%) sustained work-related injuries. Of these, 22 resulted in paraplegia and ten in quadriplegia. Fifteen were fall-related; eight were motor vehicle-related; and five were gun-related.

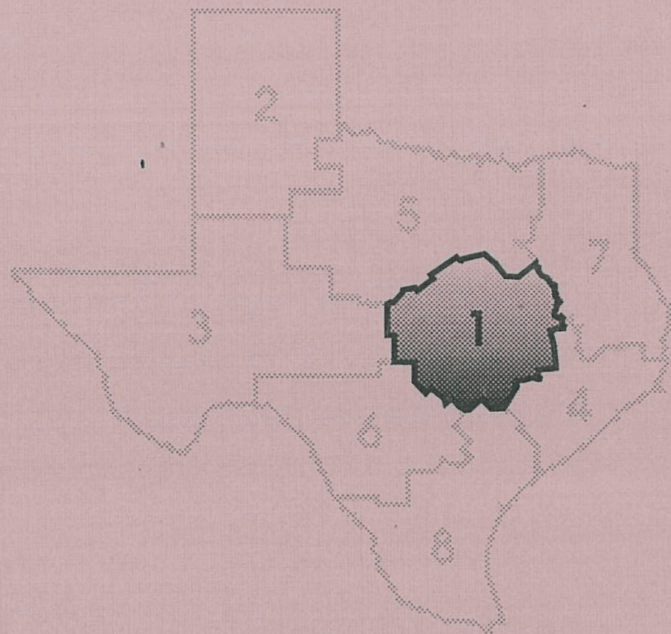
Of the 275 reported injuries, 144 (52%) resulted in quadriplegia, and 131 (48%) resulted in paraplegia. The extent of injury was reported for 271 cases. These included: 59 complete quadriplegics, 62 complete paraplegics; 66 incomplete quadriplegics, 50 incomplete paraplegics. Nine quadriplegics and eight paraplegics had minimal deficits. Fourteen cases had complete recovery. The extent of injury was unknown for seven cases.

Like other injuries, most traumatic SCIs are preventable. Over half of the SCIs reported in 1991 were the result of motor-vehicle crashes. Over two thirds (68%) of those injured in motor vehicles were not using passenger restraints. Others were speeding, overly fatigued, or under the influence of drugs or alcohol.

Sixteen percent of the traumatic SCIs were due to gunshot wounds; 60% of these were due to interpersonal violence. Well-designed community activities are needed to reduce this devastating result of violent behavior. Increased attention to firearm safety (eg, safer handling and storage of firearms and ammunition) would further reduce unintentional firearm-related SCIs.

In October 1991, the Texas Department of Health received a five-year disability prevention grant from the Centers for Disease Control. With this grant, the Injury Control Program will expand spinal cord injury surveillance throughout the state, and the Bureau of Maternal and Child Health will initiate surveillance for fetal alcohol syndrome. Under this same grant, the Texas Rehabilitation Commission will investigate secondary disabilities associated with traumatic spinal cord/brain injuries. In addition, the Texas Office of Prevention of Developmental Disabilities will design a state strategic plan for disability prevention.

REGIONAL STATISTICAL SUMMARIES



Public Health Region 1

REPORTED CASES OF SELECTED VIRAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 1 - 1991

COUNTY	1991 POPULATION	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	INFLUENZA & FLU-LIKE ILLNESS CASES	INFLUENZA & FLU-LIKE ILLNESS RATE	CHICKENPOX CASES	CHICKENPOX RATE
BASTROP	39,099	0	.0	0	.0	1	2.6	0	.0
BELL	193,505	18	9.3	1	.5	1,964	1015.0	196	101.3
BLANCO	6,088	0	.0	0	.0	0	.0	0	.0
BOSQUE	15,317	0	.0	0	.0	0	.0	0	.0
BRAZOS	122,795	5	4.1	1	.8	4,342	3536.0	406	330.6
BURLESON	13,924	1	7.2	0	.0	0	.0	0	.0
BURNET	23,262	1	4.3	0	.0	0	.0	0	.0
CALDWELL	26,762	0	.0	0	.0	0	.0	14	52.3
CORYELL	65,303	0	.0	0	.0	0	.0	1	1.5
FALLS	17,864	0	.0	0	.0	31	173.5	13	72.8
FAYETTE	20,341	0	.0	0	.0	0	.0	68	334.3
FREESTONE	16,314	0	.0	0	.0	1	6.1	0	.0
GRIMES	19,221	0	.0	0	.0	0	.0	0	.0
HAMILTON	7,809	1	12.8	0	.0	0	.0	0	.0
HAYS	66,523	0	.0	0	.0	20	30.1	18	27.1
HILL	27,377	1	3.7	0	.0	0	.0	0	.0
LAMPASAS	13,794	0	.0	0	.0	0	.0	0	.0
LEE	13,257	1	7.5	0	.0	0	.0	6	45.3
LEON	12,864	0	.0	0	.0	0	.0	0	.0
LIMESTONE	21,125	0	.0	0	.0	207	979.9	4	18.9
LLANO	11,725	0	.0	0	.0	0	.0	0	.0
MADISON	11,122	0	.0	0	.0	0	.0	0	.0
MCLENNAN	190,420	4	2.1	0	.0	790	414.9	234	122.9
MILAM	23,366	0	.0	0	.0	469	2007.2	60	256.8
MILLS	4,549	0	.0	0	.0	0	.0	0	.0
ROBERTSON	15,673	2	12.8	0	.0	0	.0	0	.0
SAN SABA	5,444	0	.0	0	.0	0	.0	0	.0
TRAVIS	584,682	40	6.8	2	.3	120	20.5	471	80.6
WASHINGTON	26,490	0	.0	0	.0	0	.0	0	.0
WILLIAMSON	144,909	9	6.2	0	.0	0	.0	17	11.7
REGIONAL TOTAL	1,760,924	83	4.7	4	.2	7,945	451.2	1,508	85.6
TEXAS	17,259,688	1,275	7.4	121	.7	386,911	2241.7	19,409	112.5

REPORTED CASES AND RATES OF HEPATITIS PER 100,000 POPULATION

PUBLIC HEALTH REGION 1 - 1991

COUNTY	1991 POPULATION	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS NANB CASES	HEPATITIS NANB RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
BASTROP	39,099	1	2.6	1	2.6	1	2.6	0	.0
BELL	193,505	6	3.1	50	25.8	0	.0	2	1.0
BLANCO	6,088	2	32.9	1	16.4	0	.0	0	.0
BOSQUE	15,317	1	6.5	1	6.5	0	.0	0	.0
BRAZOS	122,795	3	2.4	1	.8	0	.0	0	.0
BURLESON	13,924	0	.0	0	.0	1	7.2	0	.0
BURNET	23,262	1	4.3	0	.0	0	.0	0	.0
CALDWELL	26,762	5	18.7	0	.0	0	.0	0	.0
CORYELL	65,303	0	.0	3	4.6	0	.0	0	.0
FALLS	17,864	1	5.6	2	11.2	0	.0	0	.0
FAYETTE	20,341	0	.0	0	.0	0	.0	0	.0
FREESTONE	16,314	1	6.1	0	.0	0	.0	0	.0
GRIMES	19,221	0	.0	1	5.2	0	.0	0	.0
HAMILTON	7,809	1	12.8	0	.0	0	.0	0	.0
HAYS	66,523	14	21.0	3	4.5	2	3.0	0	.0
HILL	27,377	1	3.7	1	3.7	1	3.7	0	.0
LAMPASAS	13,794	0	.0	2	14.5	0	.0	0	.0
LEE	13,257	0	.0	0	.0	0	.0	0	.0
LEON	12,864	0	.0	0	.0	0	.0	0	.0
LIMESTONE	21,125	4	18.9	1	4.7	0	.0	0	.0
LLANO	11,725	0	.0	0	.0	1	8.5	0	.0
MADISON	11,122	0	.0	0	.0	0	.0	0	.0
MCLENNAN	190,420	21	11.0	26	13.7	8	4.2	1	.5
MILAM	23,366	0	.0	1	4.3	1	4.3	0	.0
MILLS	4,549	0	.0	0	.0	0	.0	0	.0
ROBERTSON	15,673	0	.0	0	.0	0	.0	0	.0
SAN SABA	5,444	1	18.4	1	18.4	0	.0	0	.0
TRAVIS	584,682	124	21.2	54	9.2	16	2.7	3	.5
WASHINGTON	26,490	0	.0	1	3.8	0	.0	0	.0
WILLIAMSON	144,909	1	.7	4	2.8	0	.0	1	.7
REGIONAL TOTAL	1,760,924	188	10.7	154	8.7	31	1.8	7	.4
TEXAS	17,259,688	2,663	15.4	1,958	11.3	144	.8	260	1.5

REPORTED CASES OF GASTROINTESTINAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 1 - 1991

COUNTY	1991 POPULATION	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	AMEBIASIS CASES	AMEBIASIS RATE
BASTROP	39,099	4	10.2	5	12.8	2	5.1	1	2.6
BELL	193,505	44	22.7	6	3.1	2	1.0	0	.0
BLANCO	6,088	1	16.4	1	16.4	0	.0	0	.0
BOSQUE	15,317	1	6.5	1	6.5	0	.0	0	.0
BRAZOS	122,795	7	5.7	10	8.1	5	4.1	3	2.4
BURLESON	13,924	0	.0	1	7.2	0	.0	0	.0
BURNET	23,262	1	4.3	0	.0	0	.0	0	.0
CALDWELL	26,762	0	.0	5	18.7	0	.0	0	.0
CORYELL	65,303	0	.0	0	.0	0	.0	0	.0
FALLS	17,864	0	.0	7	39.2	0	.0	0	.0
FAYETTE	20,341	0	.0	0	.0	0	.0	0	.0
FREESTONE	16,314	1	6.1	0	.0	0	.0	1	6.1
GRIMES	19,221	1	5.2	0	.0	1	5.2	0	.0
HAMILTON	7,809	1	12.8	0	.0	0	.0	0	.0
HAYS	66,523	12	18.0	20	30.1	3	4.5	1	1.5
HILL	27,377	1	3.7	0	.0	0	.0	0	.0
LAMPASAS	13,794	2	14.5	0	.0	0	.0	0	.0
LEE	13,257	0	.0	0	.0	1	7.5	0	.0
LEON	12,864	1	7.8	0	.0	1	7.8	0	.0
LIMESTONE	21,125	2	9.5	0	.0	0	.0	5	23.7
LLANO	11,725	1	8.5	0	.0	0	.0	0	.0
MADISON	11,122	0	.0	0	.0	0	.0	0	.0
MCLENNAN	190,420	6	3.2	19	10.0	0	.0	3	1.6
MILAM	23,366	2	8.6	0	.0	0	.0	0	.0
MILLS	4,549	0	.0	0	.0	0	.0	0	.0
ROBERTSON	15,673	0	.0	9	57.4	0	.0	0	.0
SAN SABA	5,444	0	.0	0	.0	0	.0	0	.0
TRAVIS	584,682	166	28.4	107	18.3	86	14.7	8	1.4
WASHINGTON	26,490	1	3.8	9	34.0	1	3.8	0	.0
WILLIAMSON	144,909	16	11.0	15	10.4	2	1.4	1	.7
REGIONAL TOTAL	1,760,924	271	15.4	215	12.2	104	5.9	23	1.3
TEXAS	17,259,688	2,317	13.4	2,178	12.6	810	4.7	86	.5

REPORTED CASES OF SELECTED VACCINE-PREVENTABLE DISEASES AND RATES PER 100,000 POPULATION

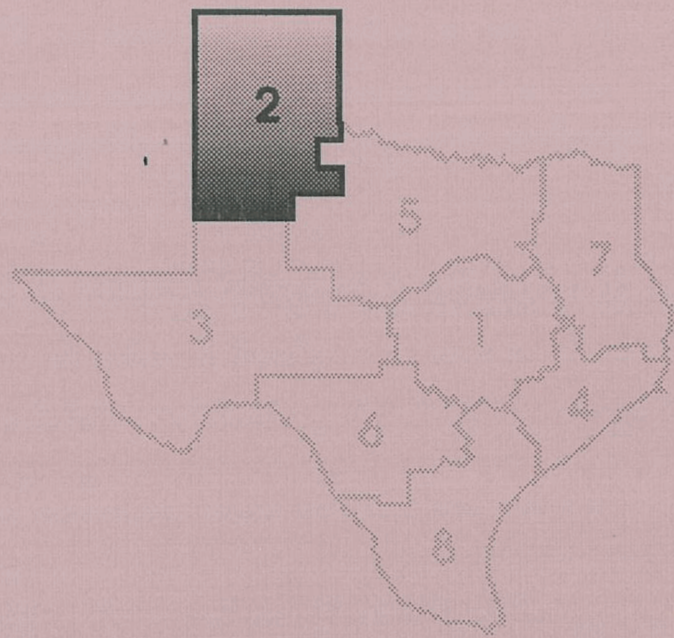
PUBLIC HEALTH REGION 1 - 1991

COUNTY	1991 POPULATION	MEASLES		MUMPS		PERTUSSIS		RUBELLA	
		CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
BASTROP	39,099	4	10.2	0	.0	2	5.1	0	.0
BELL	193,505	0	.0	3	1.6	0	.0	0	.0
BLANCO	6,088	0	.0	0	.0	0	.0	0	.0
BOSQUE	15,317	0	.0	0	.0	0	.0	0	.0
BRAZOS	122,795	0	.0	2	1.6	4	3.3	0	.0
BURLESON	13,924	0	.0	0	.0	0	.0	0	.0
BURNET	23,262	0	.0	0	.0	0	.0	0	.0
CALDWELL	26,762	0	.0	1	3.7	0	.0	0	.0
CORYELL	65,303	1	1.5	0	.0	0	.0	0	.0
FALLS	17,864	0	.0	0	.0	0	.0	0	.0
FAYETTE	20,341	0	.0	0	.0	0	.0	0	.0
FREESTONE	16,314	0	.0	0	.0	0	.0	0	.0
GRIMES	19,221	0	.0	0	.0	0	.0	0	.0
HAMILTON	7,809	0	.0	0	.0	0	.0	0	.0
HAYS	66,523	3	4.5	0	.0	0	.0	0	.0
HILL	27,377	0	.0	0	.0	1	3.7	0	.0
LAMPASAS	13,794	0	.0	0	.0	0	.0	0	.0
LEE	13,257	0	.0	2	15.1	1	7.5	0	.0
LEON	12,864	0	.0	0	.0	0	.0	0	.0
LIMESTONE	21,125	0	.0	0	.0	0	.0	0	.0
LLANO	11,725	0	.0	0	.0	0	.0	0	.0
MADISON	11,122	0	.0	0	.0	0	.0	0	.0
MCLENNAN	190,420	1	.5	2	1.1	0	.0	0	.0
MILAM	23,366	1	4.3	0	.0	0	.0	0	.0
MILLS	4,549	0	.0	1	22.0	0	.0	0	.0
ROBERTSON	15,673	0	.0	11	70.2	1	6.4	0	.0
SAN SABA	5,444	0	.0	0	.0	0	.0	0	.0
TRAVIS	584,682	38	6.5	8	1.4	35	6.0	0	.0
WASHINGTON	26,490	0	.0	0	.0	0	.0	0	.0
WILLIAMSON	144,909	1	.7		.0	0	.0	0	.0
REGIONAL TOTAL	1,760,924	49	2.8	30	1.7	44	2.5	0	.0
TEXAS	17,259,688	294	1.7	363	2.1	143	.8	16	.1

REPORTED CASES OF OTHER SELECTED DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 1 - 1991

COUNTY	1991 POPULATION	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P&S SYPHILIS CASES	P&S SYPHILIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
BASTROP	39,099	61	156.0	33	84.4	3	7.7	3	7.7
BELL	193,505	620	320.4	523	270.3	33	17.1	19	9.8
BLANCO	6,088	5	82.1	0	.0	0	.0	0	.0
BOSQUE	15,317	4	26.1	3	19.6	1	6.5	1	6.5
BRAZOS	122,795	436	355.1	319	259.8	33	26.9	9	7.3
BURLESON	13,924	18	129.3	40	287.3	1	7.2	0	.0
BURNET	23,262	29	124.7	7	30.1	0	.0	3	12.9
CALDWELL	26,762	119	444.7	58	216.7	11	41.1	1	3.7
CORYELL	65,303	77	117.9	33	50.5	6	9.2	2	3.1
FALLS	17,864	31	173.5	52	291.1	2	11.2	1	5.6
FAYETTE	20,341	32	157.3	17	83.6	3	14.7	0	.0
FREESTONE	16,314	12	73.6	12	73.6	4	24.5	1	6.1
GRIMES	19,221	49	254.9	72	374.6	15	78.0	1	5.2
HAMILTON	7,809	1	12.8	2	25.6	0	.0	0	.0
HAYS	66,523	263	395.4	30	45.1	6	9.0	9	13.5
HILL	27,377	20	73.1	27	98.6	6	21.9	2	7.3
LAMPASAS	13,794	44	319.0	18	130.5	0	.0	0	.0
LEE	13,257	17	128.2	6	45.3	5	37.7	1	7.5
LEON	12,864	7	54.4	4	31.1	14	108.8	2	15.5
LIMESTONE	21,125	45	213.0	58	274.6	11	52.1	3	14.2
LLANO	11,725	8	68.2	1	8.5	0	.0	0	.0
MADISON	11,122	14	125.9	11	98.9	1	9.0	0	.0
MCLENNAN	190,420	889	466.9	1,177	618.1	44	23.1	13	6.8
MILAM	23,366	44	188.3	68	291.0	4	17.1	1	4.3
MILLS	4,549	0	.0	1	22.0	0	.0	1	22.0
ROBERTSON	15,673	28	178.7	63	402.0	17	108.5	1	6.4
SAN SABA	5,444	3	55.1	0	.0	0	.0	0	.0
TRAVIS	584,682	2,451	419.2	1,661	284.1	89	15.2	119	20.4
WASHINGTON	26,490	37	139.7	45	169.9	5	18.9	4	15.1
WILLIAMSON	144,909	177	122.1	45	31.1	6	4.1	3	2.1
REGIONAL TOTAL	1,760,924	5,541	314.7	4,386	249.1	320	18.2	200	11.4
TEXAS	17,259,688	31,199	180.8	43,282	250.8	4,970	28.8	2,525	14.6



Public Health Region 2

REPORTED CASES OF SELECTED VIRAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 2 - 1991

COUNTY	1991 POPULATION	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	INFLUENZA & FLU-LIKE ILLNESS CASES	INFLUENZA & FLU-LIKE ILLNESS RATE	CHICKENPOX CASES	CHICKENPOX RATE
ARMSTRONG	2,038	0	.0	0	.0	0	.0	0	.0
BAILEY	7,193	0	.0	0	.0	3	41.7	30	417.1
BRISCOE	1,996	0	.0	0	.0	0	.0	0	.0
CARSON	6,643	0	.0	0	.0	0	.0	0	.0
CASTRO	9,235	0	.0	0	.0	130	1407.7	2	21.7
CHILDRESS	5,996	0	.0	1	16.7	0	.0	0	.0
COCHRAN	4,453	0	.0	0	.0	0	.0	0	.0
COLLINGSWORTH	3,613	0	.0	0	.0	0	.0	0	.0
CROSBY	7,415	1	13.5	0	.0	0	.0	0	.0
DALLAM	5,546	0	.0	0	.0	0	.0	0	.0
DEAF SMITH	19,512	1	5.1	0	.0	31	158.9	11	56.4
DICKENS	2,595	0	.0	1	38.5	0	.0	0	.0
DONLEY	3,742	0	.0	0	.0	0	.0	0	.0
FLOYD	8,634	0	.0	0	.0	36	417.0	14	162.1
GARZA	5,231	0	.0	0	.0	0	.0	0	.0
GRAY	24,107	1	4.1	0	.0	0	.0	0	.0
HALE	35,372	3	8.5	0	.0	3,332	9419.9	141	398.6
HALL	3,932	0	.0	0	.0	0	.0	4	101.7
HANSFORD	5,915	0	.0	0	.0	0	.0	0	.0
HARTLEY	3,721	0	.0	0	.0	0	.0	0	.0
HEMPHILL	3,867	0	.0	0	.0	0	.0	0	.0
HOCKLEY	24,719	0	.0	0	.0	0	.0	16	64.7
HUTCHINSON	25,914	1	3.9	0	.0	0	.0	0	.0
KING	356	0	.0	0	.0	0	.0	0	.0
LAMB	15,318	0	.0	0	.0	0	.0	0	.0
LIPSCOMB	3,166	0	.0	0	.0	0	.0	0	.0
LUBBOCK	223,694	15	6.7	1	.4	4,798	2144.9	517	231.1
LYNN	6,868	1	14.6	1	14.6	0	.0	4	58.2
MOORE	18,198	1	5.5	0	.0	20	109.9	0	.0
MOTLEY	1,542	0	.0	0	.0	0	.0	0	.0
OCHILTREE	9,223	0	.0	0	.0	0	.0	69	748.1
OLDHAM	2,309	0	.0	0	.0	0	.0	0	.0
PARMER	10,046	0	.0	0	.0	0	.0	0	.0
POTTER	98,613	4	4.1	0	.0	2,854	2894.1	258	261.6
RANDALL	90,558	2	2.2	1	1.1	2,214	2444.8	33	36.4
ROBERTS	1,037	0	.0	0	.0	0	.0	0	.0
SHERMAN	2,894	0	.0	0	.0	0	.0	0	.0
SWISHER	8,257	2	24.2	0	.0	0	.0	0	.0
TERRY	13,474	1	7.4	0	.0	220	1632.8	14	103.9
WHEELER	5,964	0	.0	0	.0	2	33.5	0	.0
YOAKUM	8,951	0	.0	0	.0	9	100.5	0	.0
REGIONAL TOTAL	741,857	33	4.4	5	.7	13,649	1839.8	1,113	150.0
TEXAS	17,259,688	1,275	7.4	121	.7	386,911	2241.7	19,409	112.5

REPORTED CASES AND RATES OF HEPATITIS PER 100,000 POPULATION

PUBLIC HEALTH REGION 2 - 1991

COUNTY	1991 POPULATION	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS NANB CASES	HEPATITIS NANB RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
ARMSTRONG	2,038	0	.0	0	.0	0	.0	0	.0
BAILEY	7,193	1	13.9	0	.0	0	.0	0	.0
BRISCOE	1,996	0	.0	0	.0	0	.0	0	.0
CARSON	6,643	0	.0	1	15.1	0	.0	0	.0
CASTRO	9,235	0	.0	1	10.8	0	.0	0	.0
CHILDRESS	5,996	1	16.7	0	.0	0	.0	0	.0
COCHRAN	4,453	0	.0	1	22.5	0	.0	0	.0
COLLINGSWORTH	3,613	0	.0	0	.0	0	.0	0	.0
CROSBY	7,415	0	.0	0	.0	0	.0	0	.0
DALLAM	5,546	0	.0	2	36.1	0	.0	0	.0
DEAF SMITH	19,512	25	128.1	0	.0	0	.0	0	.0
DICKENS	2,595	0	.0	0	.0	0	.0	0	.0
DONLEY	3,742	0	.0	0	.0	0	.0	0	.0
FLOYD	8,634	2	23.2	0	.0	0	.0	0	.0
GARZA	5,231	0	.0	0	.0	0	.0	0	.0
GRAY	24,107	1	4.1	3	12.4	0	.0	0	.0
HALE	35,372	9	25.4	3	8.5	1	2.8	0	.0
HALL	3,932	0	.0	0	.0	0	.0	0	.0
HANSFORD	5,915	0	.0	0	.0	0	.0	0	.0
HARTLEY	3,721	0	.0	0	.0	0	.0	0	.0
HEMPHILL	3,867	0	.0	0	.0	0	.0	0	.0
HOCKLEY	24,719	0	.0	3	12.1	0	.0	0	.0
HUTCHINSON	25,914	1	3.9	3	11.6	0	.0	0	.0
KING	356	0	.0	0	.0	0	.0	0	.0
LAMB	15,318	1	6.5	0	.0	0	.0	0	.0
LIPSCOMB	3,166	0	.0	0	.0	0	.0	0	.0
LUBBOCK	223,694	27	12.1	27	12.1	7	3.1	0	.0
LYNN	6,868	1	14.6	0	.0	0	.0	0	.0
MOORE	18,198	14	76.9	2	11.0	0	.0	0	.0
MOTLEY	1,542	0	.0	0	.0	0	.0	0	.0
OCHILTREE	9,223	0	.0	0	.0	0	.0	0	.0
OLDHAM	2,309	1	43.3	0	.0	0	.0	0	.0
PARMER	10,046	0	.0	0	.0	0	.0	0	.0
POTTER	98,613	51	51.7	29	29.4	1	1.0	4	4.1
RANDALL	90,558	3	3.3	9	9.9	1	1.1	1	1.1
ROBERTS	1,037	0	.0	0	.0	0	.0	0	.0
SHERMAN	2,894	0	.0	0	.0	0	.0	0	.0
SWISHER	8,257	1	12.1	1	12.1	0	.0	0	.0
TERRY	13,474	15	111.3	1	7.4	3	22.3	0	.0
WHEELER	5,964	1	16.8	0	.0	0	.0	0	.0
YOAKUM	8,951	2	22.3	1	11.2	0	.0	0	.0
REGIONAL TOTAL	741,857	157	21.2	87	11.7	13	1.8	5	.7
TEXAS	17,259,688	2,663	15.4	1,958	11.3	144	.8	260	1.5

REPORTED CASES OF GASTROINTESTINAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 2 - 1991

COUNTY	1991 POPULATION	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	AMEBIASIS CASES	AMEBIASIS RATE
ARMSTRONG	2,038	0	.0	0	.0	0	.0	0	.0
BAILEY	7,193	1	13.9	1	13.9	0	.0	0	.0
BRISCOE	1,996	1	50.1	0	.0	0	.0	0	.0
CARSON	6,643	4	60.2	2	30.1	0	.0	0	.0
CASTRO	9,235	2	21.7	4	43.3	0	.0	3	32.5
CHILDRESS	5,996	0	.0	0	.0	0	.0	0	.0
COCHRAN	4,453	0	.0	0	.0	0	.0	0	.0
COLLINGSWORTH	3,613	7	193.7	1	27.7	0	.0	0	.0
CROSBY	7,415	1	13.5	0	.0	0	.0	0	.0
DALLAM	5,546	2	36.1	0	.0	0	.0	0	.0
DEAF SMITH	19,512	12	61.5	3	15.4	2	10.3	1	5.1
DICKENS	2,595	1	38.5	0	.0	1	38.5	0	.0
DONLEY	3,742	1	26.7	0	.0	0	.0	0	.0
FLOYD	8,634	0	.0	1	11.6	0	.0	0	.0
GARZA	5,231	1	19.1	0	.0	1	19.1	0	.0
GRAY	24,107	0	.0	2	8.3	0	.0	0	.0
HALE	35,372	4	11.3	4	11.3	0	.0	0	.0
HALL	3,932	0	.0	0	.0	0	.0	0	.0
HANSFORD	5,915	0	.0	0	.0	0	.0	0	.0
HARTLEY	3,721	0	.0	0	.0	0	.0	0	.0
HEMPHILL	3,867	0	.0	0	.0	1	25.9	0	.0
HOCKLEY	24,719	2	8.1	6	24.3	3	12.1	0	.0
HUTCHINSON	25,914	3	11.6	2	7.7	0	.0	0	.0
KING	356	0	.0	0	.0	0	.0	0	.0
LAMB	15,318	2	13.1	1	6.5	2	13.1	0	.0
LIPSCOMB	3,166	0	.0	0	.0	0	.0	0	.0
LUBBOCK	223,694	73	32.6	57	25.5	28	12.5	1	.4
LYNN	6,868	2	29.1	0	.0	1	14.6	0	.0
MOORE	18,198	6	33.0	6	33.0	1	5.5	0	.0
MOTLEY	1,542	0	.0	0	.0	0	.0	0	.0
OCHILTREE	9,223	0	.0	0	.0	0	.0	0	.0
OLDHAM	2,309	0	.0	0	.0	0	.0	0	.0
PARMER	10,046	2	19.9	1	10.0	0	.0	0	.0
POTTER	98,613	32	32.5	14	14.2	18	18.3	0	.0
RANDALL	90,558	10	11.0	3	3.3	4	4.4	0	.0
ROBERTS	1,037	1	96.4	0	.0	0	.0	0	.0
SHERMAN	2,894	0	.0	0	.0	0	.0	0	.0
SWISHER	8,257	0	.0	0	.0	0	.0	0	.0
TERRY	13,474	3	22.3	3	22.3	1	7.4	0	.0
WHEELER	5,964	0	.0	0	.0	0	.0	0	.0
YOAKUM	8,951	1	11.2	2	22.3	0	.0	0	.0
REGIONAL TOTAL	741,857	174	23.5	113	15.2	63	8.5	5	.7
TEXAS	17,259,688	2,317	13.4	2,178	12.6	810	4.7	86	.5

REPORTED CASES OF SELECTED VACCINE-PREVENTABLE DISEASES AND RATES PER 100,000 POPULATION

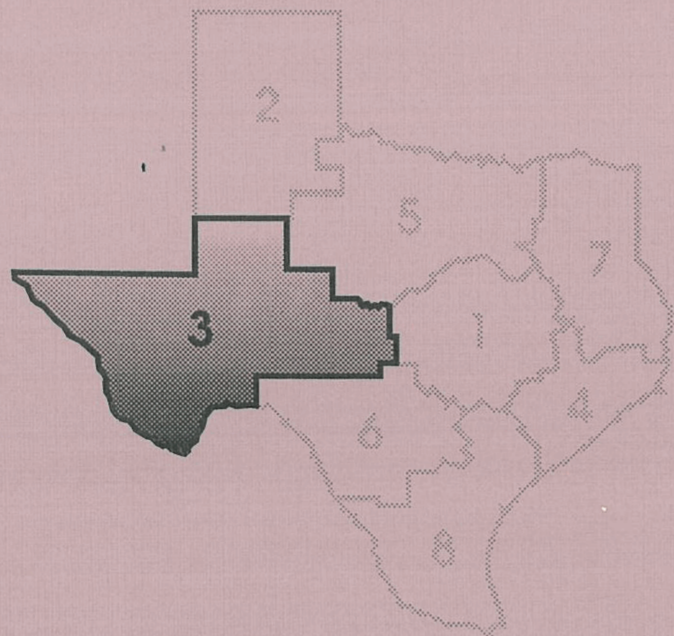
PUBLIC HEALTH REGION 2 - 1991

COUNTY	1991 POPULATION	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
ARMSTRONG	2,038	0	.0	0	.0	0	.0	0	.0
BAILEY	7,193	0	.0	0	.0	1	13.9	0	.0
BRISCOE	1,996	0	.0	0	.0	0	.0	0	.0
CARSON	6,643	0	.0	0	.0	1	15.1	0	.0
CASTRO	9,235	0	.0	0	.0	0	.0	0	.0
CHILDRESS	5,996	0	.0	0	.0	0	.0	0	.0
COCHRAN	4,453	0	.0	0	.0	0	.0	0	.0
COLLINGSWORTH	3,613	0	.0	0	.0	0	.0	0	.0
CROSBY	7,415	0	.0	0	.0	0	.0	0	.0
DALLAM	5,546	0	.0	0	.0	0	.0	0	.0
DEAF SMITH	19,512	0	.0	2	10.3	0	.0	0	.0
DICKENS	2,595	0	.0	0	.0	0	.0	0	.0
DONLEY	3,742	0	.0	0	.0	0	.0	0	.0
FLOYD	8,634	0	.0	0	.0	0	.0	0	.0
GARZA	5,231	0	.0	0	.0	0	.0	0	.0
GRAY	24,107	0	.0	0	.0	0	.0	0	.0
HALE	35,372	0	.0	1	2.8	0	.0	0	.0
HALL	3,932	0	.0	0	.0	0	.0	0	.0
HANSFORD	5,915	0	.0	1	16.9	0	.0	0	.0
HARTLEY	3,721	0	.0	0	.0	0	.0	0	.0
HEMPHILL	3,867	0	.0	0	.0	0	.0	0	.0
HOCKLEY	24,719	1	4.0	0	.0	0	.0	0	.0
HUTCHINSON	25,914	0	.0	0	.0	0	.0	0	.0
KING	356	0	.0	0	.0	0	.0	0	.0
LAMB	15,318	0	.0	3	19.6	0	.0	0	.0
LIPSCOMB	3,166	0	.0	0	.0	0	.0	0	.0
LUBBOCK	223,694	51	22.8	12	5.4	2	.9	1	.4
LYNN	6,868	0	.0	0	.0	0	.0	4	58.2
MOORE	18,198	0	.0	0	.0	1	5.5	0	.0
MOTLEY	1,542	0	.0	0	.0	0	.0	0	.0
OCHILTREE	9,223	0	.0	0	.0	0	.0	0	.0
OLDHAM	2,309	0	.0	0	.0	0	.0	0	.0
PARMER	10,046	0	.0	0	.0	0	.0	0	.0
POTTER	98,613	4	4.1	0	.0	2	2.0	0	.0
RANDALL	90,558	1	1.1	1	1.1	1	1.1	0	.0
ROBERTS	1,037	0	.0	0	.0	0	.0	0	.0
SHERMAN	2,894	0	.0	0	.0	0	.0	0	.0
SWISHER	8,257	0	.0	0	.0	0	.0	0	.0
TERRY	13,474	0	.0	0	.0	0	.0	0	.0
WHEELER	5,964	0	.0	0	.0	0	.0	0	.0
YOAKUM	8,951	0	.0	0	.0	0	.0	0	.0
REGIONAL TOTAL	741,857	57	7.7	20	2.7	8	1.1	5	.7
TEXAS	17,259,688	294	1.7	363	2.1	143	.8	16	.1

REPORTED CASES OF OTHER SELECTED DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 2 - 1991

COUNTY	1991 POPULATION	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P&S SYPHILIS CASES	P&S SYPHILIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
ARMSTRONG	2,038	1	49.1	0	.0	0	.0	0	.0
BAILEY	7,193	15	208.5	2	27.8	0	.0	12	166.8
BRISCOE	1,996	0	.0	0	.0	0	.0	0	.0
CARSON	6,643	5	75.3	2	30.1	0	.0	0	.0
CASTRO	9,235	2	21.7	4	43.3	0	.0	0	.0
CHILDRESS	5,996	6	100.1	4	66.7	0	.0	1	16.7
COCHRAN	4,453	20	449.1	7	157.2	2	44.9	0	.0
COLLINGSWORTH	3,613	8	221.4	3	83.0	0	.0	1	27.7
CROSBY	7,415	10	134.9	7	94.4	0	.0	2	27.0
DALLAM	5,546	4	72.1	2	36.1	0	.0	2	36.1
DEAF SMITH	19,512	67	343.4	23	117.9	1	5.1	0	.0
DICKENS	2,595	11	423.9	1	38.5	0	.0	0	.0
DONLEY	3,742	10	267.2	1	26.7	1	26.7	4	106.9
FLOYD	8,634	6	69.5	7	81.1	0	.0	3	34.7
GARZA	5,231	21	401.5	2	38.2	0	.0	0	.0
GRAY	24,107	31	128.6	25	103.7	1	4.1	2	8.3
HALE	35,372	25	70.7	45	127.2	0	.0	0	.0
HALL	3,932	5	127.2	4	101.7	0	.0	0	.0
HANSFORD	5,915	4	67.6	0	.0	0	.0	0	.0
HARTLEY	3,721	2	53.7	0	.0	0	.0	0	.0
HEMPHILL	3,867	0	.0	0	.0	0	.0	0	.0
HOCKLEY	24,719	73	295.3	14	56.6	6	24.3	2	8.1
HUTCHINSON	25,914	44	169.8	15	57.9	1	3.9	0	.0
KING	356	0	.0	0	.0	0	.0	0	.0
LAMB	15,318	32	208.9	6	39.2	0	.0	0	.0
LIPSCOMB	3,166	0	.0	0	.0	0	.0	0	.0
LUBBOCK	223,694	778	347.8	488	218.2	18	8.0	18	8.0
LYNN	6,868	10	145.6	0	.0	0	.0	2	29.1
MOORE	18,198	27	148.4	14	76.9	0	.0	2	11.0
MOTLEY	1,542	0	.0	0	.0	0	.0	0	.0
OCHILTREE	9,223	5	54.2	0	.0	0	.0	0	.0
OLDHAM	2,309	0	.0	0	.0	0	.0	0	.0
PARMER	10,046	15	149.3	1	10.0	0	.0	0	.0
POTTER	98,613	419	424.9	365	370.1	6	6.1	7	7.1
RANDALL	90,558	116	128.1	60	66.3	1	1.1	3	3.3
ROBERTS	1,037	1	96.4	0	.0	0	.0	0	.0
SHERMAN	2,894	0	.0	0	.0	0	.0	0	.0
SWISHER	8,257	14	169.6	2	24.2	0	.0	1	12.1
TERRY	13,474	32	237.5	14	103.9	1	7.4	2	14.8
WHEELER	5,964	4	67.1	0	.0	0	.0	0	.0
YOAKUM	8,951	22	245.8	1	11.2	0	.0	0	.0
REGIONAL TOTAL	741,857	1,845	248.7	1,119	150.8	38	5.1	64	8.6
TEXAS	17,259,688	31,199	180.8	43,282	250.8	4,970	28.8	2,525	14.6



Public Health Region 3

REPORTED CASES OF SELECTED VIRAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 3 - 1991

COUNTY	1991 POPULATION	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	INFLUENZA & FLU-LIKE ILLNESS CASES	INFLUENZA & FLU-LIKE ILLNESS RATE	CHICKENPOX CASES	CHICKENPOX RATE
ANDREWS	14,668	1	6.8	1	6.8	216	1472.6	4	27.3
BORDEN	812	0	.0	0	.0	0	.0	0	.0
BREWSTER	8,792	0	.0	0	.0	0	.0	0	.0
COKE	3,443	0	.0	0	.0	0	.0	0	.0
CONCHO	3,052	0	.0	0	.0	0	.0	0	.0
CRANE	4,744	0	.0	0	.0	0	.0	0	.0
CROCKETT	4,178	0	.0	0	.0	0	.0	0	.0
CULBERSON	3,492	0	.0	0	.0	0	.0	0	.0
DAWSON	14,539	0	.0	0	.0	492	3384.0	64	440.2
ECTOR	121,131	0	.0	0	.0	429	354.2	255	210.5
EL PASO	603,489	3	.5	3	.5	3,504	580.6	1,126	186.6
GAINES	14,393	0	.0	0	.0	10	69.5	1	6.9
GLASSCOCK	1,480	0	.0	0	.0	0	.0	0	.0
HOWARD	32,500	2	6.2	0	.0	23	70.8	0	.0
HUDSPETH	2,927	0	.0	0	.0	0	.0	0	.0
IRION	1,664	0	.0	0	.0	0	.0	0	.0
JEFF DAVIS	1,979	0	.0	0	.0	0	.0	7	353.7
KIMBLE	4,162	0	.0	0	.0	0	.0	0	.0
LOVING	107	0	.0	0	.0	0	.0	0	.0
MARTIN	5,043	0	.0	0	.0	0	.0	0	.0
MASON	3,447	0	.0	0	.0	0	.0	0	.0
MCCULLOCH	8,840	0	.0	0	.0	0	.0	0	.0
MENARD	2,282	0	.0	0	.0	0	.0	0	.0
MIDLAND	108,519	20	18.4	0	.0	1,047	964.8	207	190.8
PECOS	15,040	0	.0	0	.0	0	.0	0	.0
PRESIDIO	6,735	0	.0	0	.0	0	.0	0	.0
REAGAN	4,642	0	.0	0	.0	0	.0	13	280.1
REEVES	16,147	0	.0	0	.0	0	.0	2	12.4
SCHLEICHER	3,059	0	.0	0	.0	0	.0	0	.0
STERLING	1,465	1	68.3	0	.0	0	.0	0	.0
SUTTON	4,276	0	.0	0	.0	0	.0	0	.0
TERRELL	1,430	0	.0	0	.0	0	.0	0	.0
TOM GREEN	99,038	11	11.1	1	1.0	330	333.2	163	164.6
UPTON	4,522	0	.0	0	.0	0	.0	0	.0
WARD	13,337	0	.0	0	.0	0	.0	0	.0
WINKLER	8,827	0	.0	0	.0	15	169.9	0	.0
REGIONAL TOTAL	1,148,201	38	3.3	5	.4	6,066	528.3	1,842	160.4
TEXAS	17,259,688	1,275	7.4	121	.7	386,911	2241.7	19,409	112.5

REPORTED CASES AND RATES OF HEPATITIS PER 100,000 POPULATION

PUBLIC HEALTH REGION 3 - 1991

COUNTY	1991 POPULATION	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS NANB CASES	HEPATITIS NANB RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
ANDREWS	14,668	2	13.6	1	6.8	0	.0	0	.0
BORDEN	812	0	.0	0	.0	0	.0	0	.0
BREWSTER	8,792	2	22.7	1	11.4	0	.0	0	.0
COKE	3,443	0	.0	0	.0	0	.0	0	.0
CONCHO	3,052	0	.0	0	.0	0	.0	0	.0
CRANE	4,744	0	.0	0	.0	1	21.1	0	.0
CROCKETT	4,178	1	23.9	0	.0	0	.0	0	.0
CULBERSON	3,492	0	.0	0	.0	0	.0	0	.0
DAWSON	14,539	4	27.5	1	6.9	0	.0	0	.0
ECTOR	121,131	36	29.7	15	12.4	0	.0	12	9.9
EL PASO	603,489	215	35.6	47	7.8	3	.5	8	1.3
GAINES	14,393	14	97.3	2	13.9	0	.0	1	6.9
GLASSCOCK	1,480	0	.0	0	.0	0	.0	0	.0
HOWARD	32,500	1	3.1	14	43.1	0	.0	0	.0
HUDSPETH	2,927	2	68.3	0	.0	0	.0	0	.0
IRION	1,664	0	.0	0	.0	0	.0	0	.0
JEFF DAVIS	1,979	0	.0	0	.0	0	.0	0	.0
KIMBLE	4,162	0	.0	0	.0	0	.0	0	.0
LOVING	107	0	.0	0	.0	0	.0	0	.0
MARTIN	5,043	1	19.8	0	.0	0	.0	1	19.8
MASON	3,447	0	.0	0	.0	0	.0	0	.0
MCCULLOCH	8,840	1	11.3	0	.0	0	.0	0	.0
MENARD	2,282	0	.0	0	.0	0	.0	0	.0
MIDLAND	108,519	16	14.7	34	31.3	0	.0	0	.0
PECOS	15,040	5	33.2	1	6.6	0	.0	0	.0
PRESIDIO	6,735	0	.0	1	14.8	0	.0	0	.0
REAGAN	4,642	1	21.5	0	.0	0	.0	0	.0
REEVES	16,147	2	12.4	0	.0	2	12.4	0	.0
SCHLEICHER	3,059	0	.0	0	.0	1	32.7	0	.0
STERLING	1,465	0	.0	0	.0	0	.0	0	.0
SUTTON	4,276	0	.0	1	23.4	0	.0	0	.0
TERRELL	1,430	0	.0	0	.0	0	.0	0	.0
TOM GREEN	99,038	12	12.1	9	9.1	1	1.0	0	.0
UPTON	4,522	0	.0	1	22.1	0	.0	0	.0
WARD	13,337	1	7.5	0	.0	0	.0	0	.0
WINKLER	8,827		.0		.0		.0	0	.0
REGIONAL TOTAL	1,148,201	316	27.5	128	11.1	8	.7	22	1.9
TEXAS	17,259,688	2,663	15.4	1,958	11.3	144	.8	260	1.5

REPORTED CASES OF GASTROINTESTINAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 3 - 1991

COUNTY	1991 POPULATION	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	AMEBIASIS CASES	AMEBIASIS RATE
ANDREWS	14,668	3	20.5	0	.0	0	.0	0	.0
BORDEN	812	0	.0	0	.0	0	.0	0	.0
BREWSTER	8,792	1	11.4	0	.0	0	.0	0	.0
COKE	3,443	0	.0	0	.0	0	.0	0	.0
CONCHO	3,052	0	.0	0	.0	0	.0	0	.0
CRANE	4,744	1	21.1	1	21.1	0	.0	0	.0
CROCKETT	4,178	0	.0	0	.0	0	.0	0	.0
CULBERSON	3,492	0	.0	0	.0	0	.0	0	.0
DAWSON	14,539	4	27.5	8	55.0	0	.0	0	.0
ECTOR	121,131	30	24.8	22	18.2	0	.0	1	.8
EL PASO	603,489	140	23.2	77	12.8	34	5.6	2	.3
GAINES	14,393	0	.0	1	6.9	0	.0	0	.0
GLASSCOCK	1,480	0	.0	1	67.6	0	.0	0	.0
HOWARD	32,500	3	9.2	0	.0	0	.0	0	.0
HUDSPETH	2,927	0	.0	0	.0	0	.0	0	.0
IRION	1,664	2	120.2	1	60.1	0	.0	0	.0
JEFF DAVIS	1,979	0	.0	0	.0	0	.0	0	.0
KIMBLE	4,162	0	.0	0	.0	0	.0	0	.0
LOVING	107	0	.0	0	.0	0	.0	0	.0
MARTIN	5,043	2	39.7	0	.0	0	.0	0	.0
MASON	3,447	0	.0	0	.0	0	.0	0	.0
MCCULLOCH	8,840	0	.0	0	.0	0	.0	0	.0
MENARD	2,282	0	.0	0	.0	0	.0	0	.0
MIDLAND	108,519	23	21.2	8	7.4	1	.9	0	.0
PECOS	15,040	7	46.5	0	.0	4	26.6	0	.0
PRESIDIO	6,735	0	.0	1	14.8	0	.0	0	.0
REAGAN	4,642	1	21.5	0	.0	0	.0	0	.0
REEVES	16,147	3	18.6	1	6.2	0	.0	0	.0
SCHLEICHER	3,059	2	65.4	0	.0	0	.0	0	.0
STERLING	1,465	0	.0	0	.0	0	.0	0	.0
SUTTON	4,276	0	.0	0	.0	0	.0	0	.0
TERRELL	1,430	0	.0	0	.0	0	.0	0	.0
TOM GREEN	99,038	27	27.3	8	8.1	4	4.0	0	.0
UPTON	4,522	0	.0	0	.0	0	.0	0	.0
WARD	13,337	1	7.5	0	.0	0	.0	0	.0
WINKLER	8,827	2	22.7	1	11.3	0	.0	0	.0
REGIONAL TOTAL	1,148,201	252	21.9	130	11.3	43	3.7	3	.3
TEXAS	17,259,688	2,317	13.4	2,178	12.6	810	4.7	86	.5

REPORTED CASES OF SELECTED VACCINE-PREVENTABLE DISEASES AND RATES PER 100,000 POPULATION

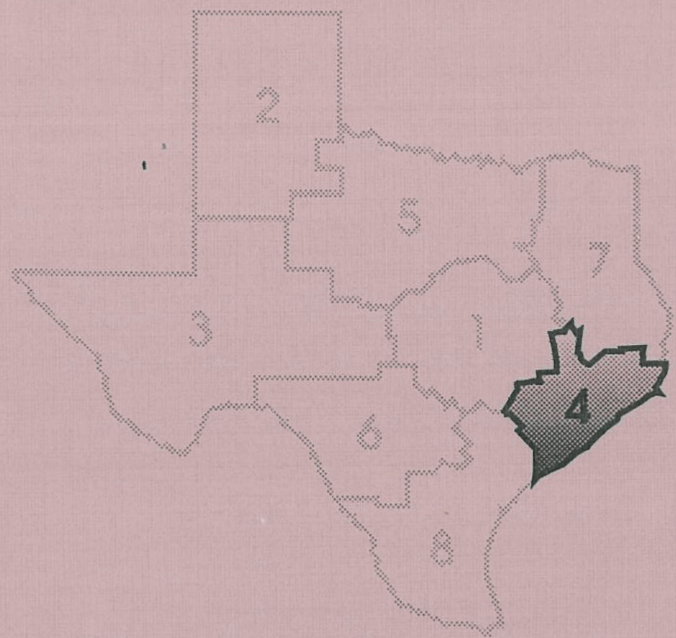
PUBLIC HEALTH REGION 3 - 1991

COUNTY	1991 POPULATION	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
ANDREWS	14,668	0	.0	4	27.3	1	6.8	0	.0
BORDEN	812	0	.0	0	.0	0	.0	0	.0
BREWSTER	8,792	0	.0	0	.0	0	.0	0	.0
COKE	3,443	0	.0	0	.0	0	.0	0	.0
CONCHO	3,052	0	.0	0	.0	0	.0	0	.0
CRANE	4,744	0	.0	1	21.1	0	.0	0	.0
CROCKETT	4,178	0	.0	0	.0	0	.0	0	.0
CULBERSON	3,492	0	.0	0	.0	0	.0	0	.0
DAWSON	14,539	0	.0	2	13.8	0	.0	0	.0
ECTOR	121,131	2	1.7	6	5.0	2	1.7	0	.0
EL PASO	603,489	0	.0	47	7.8	4	.7	2	.3
GAINES	14,393	0	.0	0	.0	0	.0	0	.0
GLASSCOCK	1,480	0	.0	0	.0	0	.0	0	.0
HOWARD	32,500	0	.0	0	.0	0	.0	0	.0
HUDSPETH	2,927	0	.0	0	.0	0	.0	0	.0
IRION	1,664	0	.0	0	.0	0	.0	0	.0
JEFF DAVIS	1,979	0	.0	1	50.5	0	.0	0	.0
KIMBLE	4,162	0	.0	0	.0	0	.0	0	.0
LOVING	107	0	.0	0	.0	0	.0	0	.0
MARTIN	5,043	0	.0	0	.0	0	.0	0	.0
MASON	3,447	0	.0	0	.0	0	.0	0	.0
MCCULLOCH	8,840	0	.0	0	.0	0	.0	0	.0
MENARD	2,282	0	.0	0	.0	0	.0	0	.0
MIDLAND	108,519	1	.9	7	6.5	0	.0	0	.0
PECOS	15,040	0	.0	1	6.6	0	.0	0	.0
PRESIDIO	6,735	0	.0	0	.0	0	.0	0	.0
REAGAN	4,642	0	.0	3	64.6	0	.0	0	.0
REEVES	16,147	0	.0	0	.0	0	.0	0	.0
SCHLEICHER	3,059	0	.0	0	.0	0	.0	0	.0
STERLING	1,465	0	.0	0	.0	0	.0	0	.0
SUTTON	4,276	0	.0	0	.0	0	.0	0	.0
TERRELL	1,430	0	.0	0	.0	0	.0	0	.0
TOM GREEN	99,038	0	.0	0	.0	0	.0	0	.0
UPTON	4,522	0	.0	2	44.2	0	.0	0	.0
WARD	13,337	2	15.0	0	.0	0	.0	0	.0
WINKLER	8,827	0	.0	0	.0	0	.0	0	.0
REGIONAL TOTAL	1,148,201	5	.4	74	6.4	7	.6	2	.2
TEXAS	17,259,688	294	1.7	363	2.1	143	.8	16	.1

REPORTED CASES OF OTHER SELECTED DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 3 - 1991

COUNTY	1991 POPULATION	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P&S SYPHILIS CASES	P&S SYPHILIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
ANDREWS	14,668	23	156.8	8	54.5	0	.0	1	6.8
BORDEN	812	0	.0	0	.0	0	.0	0	.0
BREWSTER	8,792	45	511.8	5	56.9	0	.0	0	.0
COKE	3,443	6	174.3	0	.0	0	.0	0	.0
CONCHO	3,052	2	65.5	1	32.8	0	.0	1	32.8
CRANE	4,744	3	63.2	1	21.1	0	.0	1	21.1
CROCKETT	4,178	4	95.7	0	.0	0	.0	0	.0
CULBERSON	3,492	0	.0	0	.0	0	.0	0	.0
DAWSON	14,539	25	172.0	2	13.8	1	6.9	1	6.9
ECTOR	121,131	201	165.9	198	163.5	25	20.6	12	9.9
EL PASO	603,489	1,065	176.5	317	52.5	28	4.6	152	25.2
GAINES	14,393	30	208.4	1	6.9	1	6.9	2	13.9
GLASSCOCK	1,480	0	.0	0	.0	1	67.6	0	.0
HOWARD	32,500	17	52.3	22	67.7	0	.0	2	6.2
HUDSPETH	2,927	0	.0	0	.0	0	.0	0	.0
IRION	1,664	0	.0	0	.0	0	.0	0	.0
JEFF DAVIS	1,979	0	.0	0	.0	0	.0	0	.0
KIMBLE	4,162	0	.0	0	.0	0	.0	0	.0
LOVING	107	0	.0	0	.0	0	.0	0	.0
MARTIN	5,043	7	138.8	0	.0	0	.0	0	.0
MASON	3,447	0	.0	0	.0	0	.0	0	.0
MCCULLOCH	8,840	4	45.2	1	11.3	0	.0	0	.0
MENARD	2,282	0	.0	0	.0	0	.0	0	.0
MIDLAND	108,519	231	212.9	214	197.2	5	4.6	7	6.5
PECOS	15,040	20	133.0	11	73.1	0	.0	1	6.6
PRESIDIO	6,735	10	148.5	0	.0	0	.0	2	29.7
REAGAN	4,642	6	129.3	1	21.5	0	.0	0	.0
REEVES	16,147	9	55.7	0	.0	0	.0	0	.0
SCHLEICHER	3,059	1	32.7	0	.0	0	.0	0	.0
STERLING	1,465	1	68.3	2	136.5	0	.0	0	.0
SUTTON	4,276	1	23.4	0	.0	0	.0	1	23.4
TERRELL	1,430	1	69.9	1	69.9	0	.0	0	.0
TOM GREEN	99,038	269	271.6	107	108.0	3	3.0	5	5.0
UPTON	4,522	4	88.5	0	.0	0	.0	0	.0
WARD	13,337	4	30.0	5	37.5	0	.0	3	22.5
WINKLER	8,827	17	192.6	3	34.0	0	.0	0	.0
REGIONAL TOTAL	1,148,201	2,006	174.7	900	78.4	64	5.6	191	16.6
TEXAS	17,259,688	31,199	180.8	43,282	250.8	4,970	28.8	2,525	14.6



Public Health Region 4

REPORTED CASES OF SELECTED VIRAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 4 - 1991

COUNTY	1991 POPULATION	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	INFLUENZA & FLU-LIKE ILLNESS CASES	INFLUENZA & FLU-LIKE ILLNESS RATE	CHICKENPOX CASES	CHICKENPOX RATE
AUSTIN	20,075	0	.0	0	.0	0	.0	0	.0
BRAZORIA	196,323	9	4.6	2	1.0	6	3.1	39	19.9
CHAMBERS	20,810	1	4.8	0	.0	0	.0	11	52.9
COLORADO	18,664	0	.0	0	.0	0	.0	0	.0
FORT BEND	234,620	20	8.5	2	.9	19	8.1	8	3.4
GALVESTON	218,965	54	24.7	3	1.4	5,308	2424.1	386	176.3
HARDIN	42,293	1	2.4	0	.0	0	.0	6	14.2
HARRIS	2,872,645	438	15.2	58	2.0	309,249	10765.3	4,695	163.4
JEFFERSON	239,696	23	9.6	2	.8	4,686	1955.0	1,124	468.9
LIBERTY	54,255	5	9.2	0	.0	0	.0	0	.0
MATAGORDA	37,919	0	.0	0	.0	180	474.7	99	261.1
MONTGOMERY	190,213	11	5.8	1	.5	1	.5	4	2.1
ORANGE	81,261	2	2.5	0	.0	0	.0	0	.0
WALKER	51,740	1	1.9	0	.0	25	48.3	102	197.1
WALLER	24,009	2	8.3	0	.0	0	.0	0	.0
WHARTON	40,384	1	2.5	1	2.5	4	9.9	0	.0
REGIONAL TOTAL	4,343,872	568	13.1	69	1.6	319,478	7354.7	6,474	149.0
TEXAS	17,259,688	1,275	7.4	121	.7	386,911	2241.7	19,409	112.5

REPORTED CASES AND RATES OF HEPATITIS PER 100,000 POPULATION

PUBLIC HEALTH REGION 4 - 1991

COUNTY	1991 POPULATION	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS NANB CASES	HEPATITIS NANB RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
AUSTIN	20,075	0	.0	1	5.0	0	.0	0	.0
BRAZORIA	196,323	18	9.2	11	5.6	0	.0	0	.0
CHAMBERS	20,810	0	.0	1	4.8	0	.0	0	.0
COLORADO	18,664	0	.0	2	10.7	0	.0	0	.0
FORT BEND	234,620	9	3.8	12	5.1	0	.0	0	.0
GALVESTON	218,965	63	28.8	35	16.0	1	.5	0	.0
HARDIN	42,293	2	4.7	8	18.9	0	.0	0	.0
HARRIS	2,872,645	358	12.5	193	6.7	25	.9	50	1.7
JEFFERSON	239,696	41	17.1	60	25.0	4	1.7	3	1.3
LIBERTY	54,255	6	11.1	1	1.8	0	.0	0	.0
MATAGORDA	37,919	1	2.6	1	2.6	0	.0	0	.0
MONTGOMERY	190,213	15	7.9	9	4.7	0	.0	0	.0
ORANGE	81,261	2	2.5	3	3.7	0	.0	0	.0
WALKER	51,740	9	17.4	43	83.1	0	.0	0	.0
WALLER	24,009	0	.0	1	4.2	0	.0	0	.0
WHARTON	40,384	1	2.5	2	5.0	0	.0	1	2.5
REGIONAL TOTAL	4,343,872	525	12.1	383	8.8	30	.7	54	1.2
TEXAS	17,259,688	2,663	15.4	1,958	11.3	144	.8	260	1.5

REPORTED CASES OF GASTROINTESTINAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 4 - 1991

COUNTY	1991 POPULATION	SALMONELLOSIS		SHIGELLOSIS		CAMPYLOBACTER		AMEBIASIS	
		CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
AUSTIN	20,075	2	10.0	2	10.0	1	5.0	0	.0
BRAZORIA	196,323	23	11.7	17	8.7	2	1.0	0	.0
CHAMBERS	20,810	1	4.8	0	.0	1	4.8	0	.0
COLORADO	18,664	4	21.4	1	5.4	0	.0	0	.0
FORT BEND	234,620	29	12.4	25	10.7	12	5.1	1	.4
GALVESTON	218,965	38	17.4	16	7.3	16	7.3	0	.0
HARDIN	42,293	4	9.5	4	9.5	2	4.7	0	.0
HARRIS	2,872,645	328	11.4	373	13.0	106	3.7	5	.2
JEFFERSON	239,696	17	7.1	105	43.8	23	9.6	0	.0
LIBERTY	54,255	5	9.2	2	3.7	0	.0	0	.0
MATAGORDA	37,919	0	.0	0	.0	0	.0	0	.0
MONTGOMERY	190,213	13	6.8	4	2.1	4	2.1	0	.0
ORANGE	81,261	9	11.1	31	38.1	2	2.5	0	.0
WALKER	51,740	2	3.9	1	1.9	1	1.9	0	.0
WALLER	24,009	3	12.5	0	.0	1	4.2	0	.0
WHARTON	40,384	0	.0	2	5.0	0	.0	0	.0
								0	
REGIONAL TOTAL	4,343,872	478	11.0	583	13.4	171	3.9	6	.1
TEXAS	17,259,688	2,317	13.4	2,178	12.6	810	4.7	86	.5

REPORTED CASES OF VACCINE-PREVENTABLE DISEASES AND RATES PER 100,000 POPULATION

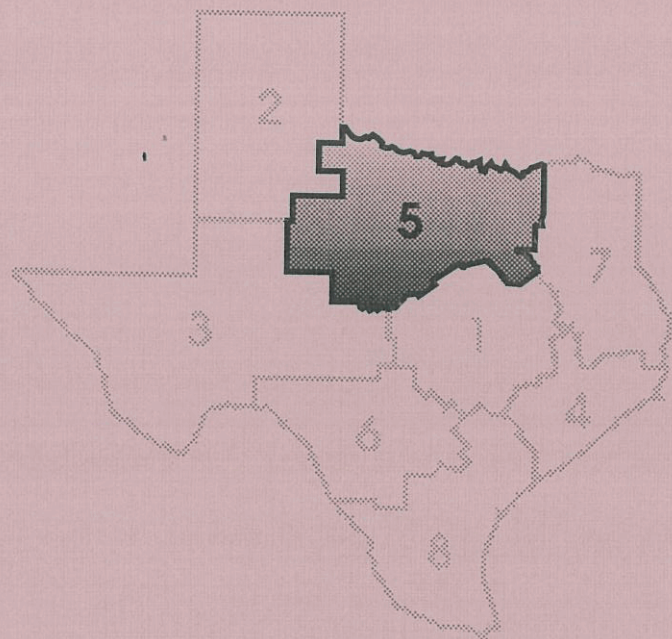
PUBLIC HEALTH REGION 4 - 1991

COUNTY	1991 POPULATION	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
AUSTIN	20,075	0	.0	0	.0	0	.0	0	.0
BRAZORIA	196,323	1	.5	2	1.0	0	.0	0	.0
CHAMBERS	20,810	0	.0	1	4.8	0	.0	0	.0
COLORADO	18,664	0	.0	0	.0	0	.0	0	.0
FORT BEND	234,620	0	.0	0	.0	0	.0	0	.0
GALVESTON	218,965	0	.0	5	2.3	2	.9	0	.0
HARDIN	42,293	0	.0	1	2.4	0	.0	0	.0
HARRIS	2,872,645	11	.4	64	2.2	4	.1	0	.0
JEFFERSON	239,696	1	.4	13	5.4	0	.0	0	.0
LIBERTY	54,255	2	3.7	0	.0	0	.0	0	.0
MATAGORDA	37,919	0	.0	0	.0	0	.0	0	.0
MONTGOMERY	190,213	0	.0	4	2.1	1	.5	0	.0
ORANGE	81,261	0	.0	2	2.5	0	.0	0	.0
WALKER	51,740	0	.0	0	.0	0	.0	0	.0
WALLER	24,009	0	.0	0	.0	0	.0	0	.0
WHARTON	40,384	0	.0	0	.0	0	.0	0	.0
REGIONAL TOTAL	4,343,872	15	.3	92	2.1	7	.2	0	.0
TEXAS	17,259,688	294	1.7	363	2.1	143	.8	16	.1

REPORTED CASES OF OTHER SELECTED DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 4 - 1991

COUNTY	1991 POPULATION	CHLAMYDIA		GONORRHEA		P&S SYPHILIS		TUBERCULOSIS	
		CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
AUSTIN	20,075	10	49.8	13	64.8	5	24.9	0	.0
BRAZORIA	196,323	94	47.9	158	80.5	13	6.6	15	7.6
CHAMBERS	20,810	2	9.6	2	9.6	0	.0	2	9.6
COLORADO	18,664	8	42.9	13	69.7	8	42.9	0	.0
FORT BEND	234,620	69	29.4	106	45.2	28	11.9	31	13.2
GALVESTON	218,965	1,285	586.9	883	403.3	71	32.4	36	16.4
HARDIN	42,293	5	11.8	6	14.2	2	4.7	5	11.8
HARRIS	2,872,645	7,045	245.2	12,691	441.8	1,682	58.6	609	21.2
JEFFERSON	239,696	37	15.4	1,192	497.3	132	55.1	44	18.4
LIBERTY	54,255	44	81.1	43	79.3	5	9.2	13	24.0
MATAGORDA	37,919	17	44.8	47	123.9	14	36.9	11	29.0
MONTGOMERY	190,213	198	104.1	220	115.7	27	14.2	28	14.7
ORANGE	81,261	9	11.1	97	119.4	10	12.3	11	13.5
WALKER	51,740	130	251.3	136	262.9	33	63.8	55	106.3
WALLER	24,009	179	745.6	149	620.6	26	108.3	2	8.3
WHARTON	40,384	56	138.7	104	257.5	20	49.5	11	27.2
REGIONAL TOTAL	4,343,872	9,188	211.5	15,860	365.1	2,076	47.8	873	20.1
TEXAS	17,259,688	31,199	180.8	43,282	250.8	4,970	28.8	2,525	14.6



Public Health Region 5

REPORTED CASES OF SELECTED VIRAL DISEASES AND RATES PER 100,000 POPULATION
PUBLIC HEALTH REGION 5 - 1991

COUNTY	1991 POPULATION	ASEPTIC MENINGITIS CASES	RATE	ENCEPHALITIS CASES	RATE	INFLUENZA & FLU-LIKE ILLNESS CASES	RATE	CHICKENPOX CASES	RATE
ARCHER	8,103	0	.0	0	.0	0	.0	0	.0
BAYLOR	4,407	0	.0	0	.0	0	.0	0	.0
BROWN	34,997	0	.0	0	.0	0	.0	7	20.0
CALLAHAN	12,178	2	16.4	0	.0	0	.0	0	.0
CLAY	10,091	0	.0	0	.0	5	49.5	0	.0
COLEMAN	9,763	0	.0	0	.0	0	.0	1	10.2
COLLIN	275,781	19	6.9	0	.0	13,791	5000.7	689	249.8
COMANCHE	13,499	0	.0	0	.0	74	548.2	26	192.6
COOKE	31,064	0	.0	0	.0	0	.0	17	54.7
COTTLE	2,264	0	.0	0	.0	0	.0	0	.0
DALLAS	1,870,753	171	9.1	5	.3	119	6.4	1	.1
DENTON	282,878	14	4.9	2	.7	693	245.0	203	71.8
EASTLAND	18,659	0	.0	0	.0	8	42.9	23	123.3
ELLIS	86,878	6	6.9	0	.0	0	.0	0	.0
ERATH	28,331	1	3.5	0	.0	0	.0	0	.0
FANNIN	24,933	1	4.0	0	.0	0	.0	0	.0
FISHER	4,886	0	.0	0	.0	0	.0	0	.0
FOARD	1,805	0	.0	0	.0	0	.0	0	.0
GRAYSON	95,626	2	2.1	0	.0	4	4.2	46	48.1
HARDEMAN	5,322	0	.0	0	.0	0	.0	0	.0
HASKELL	6,868	0	.0	0	.0	0	.0	0	.0
HOOD	29,888	0	.0	0	.0	0	.0	0	.0
HUNT	64,889	2	3.1	0	.0	9	13.9	19	29.3
JACK	7,040	0	.0	0	.0	0	.0	2	28.4
JOHNSON	99,675	1	1.0	1	1.0	0	.0	0	.0
JONES	16,674	0	.0	0	.0	42	251.9	5	30.0
KAUFMAN	53,148	2	3.8	0	.0	0	.0	0	.0
KENT	1,014	0	.0	0	.0	0	.0	0	.0
KNOX	4,885	0	.0	0	.0	0	.0	0	.0
MITCHELL	8,105	0	.0	0	.0	0	.0	0	.0
MONTAGUE	17,396	0	.0	0	2.0	0	.0	0	.0
NAVARRO	40,316	0	.0	0	.0	0	.0	134	332.4
NOLAN	16,842	1	5.9	0	.0	0	.0	0	.0
PALO PINTO	25,050	0	.0	0	.0	0	.0	0	.0
PARKER	65,776	1	1.5	1	1.5	0	.0	0	.0
ROCKWALL	26,630	2	7.5	0	.0	0	.0	0	.0
RUNNELS	11,393	1	8.8	0	.0	1	8.8	1	8.8
SCURRY	19,012	0	.0	0	.0	0	.0	0	.0
SHACKELFORD	3,347	0	.0	0	.0	0	.0	0	.0
SOMERVELL	5,552	0	.0	0	.0	0	.0	0	.0
STEPHENS	9,169	0	.0	0	.0	26	283.6	0	.0
STONEWALL	2,035	0	.0	0	.0	0	.0	0	.0
TARRANT	1,177,915	84	7.1	6	.5	1,359	115.4	2,059	174.8
TAYLOR	120,535	9	7.5	2	1.7	2,437	2021.8	378	313.6
THROCKMORTON	1,892	0	.0	0	.0	0	.0	0	.0
WICHITA	122,292	2	1.6	2	1.6	53	43.3	21	17.2
WILBARGER	15,268	0	.0	0	.0	108	707.4	0	.0
WISE	35,411	0	.0	0	.0	0	.0	0	.0
YOUNG	18,453	2	10.8	0	.0	0	.0	0	.0
REGIONAL TOTAL	4,848,688	323	6.7	19	.4	18,729	386.3	3,632	74.9
TEXAS	17,259,688	1,275	7.4	121	.7	386,911	2241.7	19,409	112.5

REPORTED CASES AND RATES OF HEPATITIS PER 100,000 POPULATION

PUBLIC HEALTH REGION 5 - 1991

COUNTY	1991 POPULATION	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS NANB CASES	HEPATITIS NANB RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
ARCHER	8,103	0	.0	0	.0	0	.0	0	.0
BAYLOR	4,407	0	.0	0	.0	0	.0	0	.0
BROWN	34,997	10	28.6	4	11.4	0	.0	0	.0
CALLAHAN	12,178	0	.0	0	.0	0	.0	1	8.2
CLAY	10,091	2	19.8	0	.0	0	.0	0	.0
COLEMAN	9,763	0	.0	3	30.7	0	.0	0	.0
COLLIN	275,781	10	3.6	27	9.8	0	.0	3	1.1
COMANCHE	13,499	1	7.4	0	.0	0	.0	0	.0
COOKE	31,064	3	9.7	4	12.9	0	.0	0	.0
COTTLE	2,264	0	.0	0	.0	0	.0	0	.0
DALLAS	1,870,753	272	14.5	382	20.4	18	1.0	62	3.3
DENTON	282,878	7	2.5	15	5.3	0	.0	4	1.4
EASTLAND	18,659	0	.0	2	10.7	0	.0	0	.0
ELLIS	86,878	10	11.5	5	5.8	1	1.2	2	2.3
ERATH	28,331	2	7.1	1	3.5	0	.0	0	.0
FANNIN	24,933	7	28.1	2	8.0	0	.0	0	.0
FISHER	4,886	0	.0	0	.0	0	.0	0	.0
FOARD	1,805	0	.0	0	.0	0	.0	0	.0
GRAYSON	95,626	3	3.1	13	13.6	0	.0	1	1.0
HARDEMAN	5,322	0	.0	1	18.8	0	.0	0	.0
HASKELL	6,868	3	43.7	1	14.6	1	14.6	0	.0
HOOD	29,888	2	6.7	3	10.0	0	.0	0	.0
HUNT	64,889	1	1.5	8	12.3	0	.0	0	.0
JACK	7,040	0	.0	2	28.4	0	.0	0	.0
JOHNSON	99,675	20	20.1	9	9.0	3	3.0	0	.0
JONES	16,674	3	18.0	1	6.0	0	.0	0	.0
KAUFMAN	53,148	7	13.2	5	9.4	0	.0	0	.0
KENT	1,014	0	.0	0	.0	0	.0	0	.0
KNOX	4,885	32	655.1	0	.0	0	.0	1	20.5
MITCHELL	8,105	0	.0	1	12.3	0	.0	0	.0
MONTAGUE	17,396	0	.0	1	2.0	0	.0	0	.0
NAVARRO	40,316	1	2.5	4	9.9	0	.0	0	.0
NOLAN	16,842	1	5.9	1	5.9	0	.0	0	.0
PALO PINTO	25,050	2	8.0	2	8.0	0	.0	0	.0
PARKER	65,776	5	7.6	7	10.6	0	.0	0	.0
ROCKWALL	26,630	15	56.3	3	11.3	0	.0	0	.0
RUNNELS	11,393	13	114.1	0	.0	0	.0	0	.0
SCURRY	19,012	0	.0	4	21.0	0	.0	0	.0
SHACKELFORD	3,347	0	.0	0	.0	0	.0	0	.0
SOMERVELL	5,552	0	.0	0	.0	0	.0	0	.0
STEPHENS	9,169	0	.0	1	10.9	0	.0	0	.0
STONEWALL	2,035	0	.0	1	49.1	0	.0	0	.0
TARRANT	1,177,915	170	14.4	239	20.3	17	1.4	3	.3
TAYLOR	120,535	25	20.7	4	3.3	3	2.5	1	.8
THROCKMORTON	1,892	1	52.9	0	.0	0	.0	0	.0
WICHITA	122,292	12	9.8	25	20.4	1	.8	1	.8
WILBARGER	15,268	1	6.5	3	19.6	0	.0	0	.0
WISE	35,411	3	8.5	1	2.8	1	2.8	0	.0
YOUNG	18,453	6	32.5	1	5.4	0	.0	0	.0
REGIONAL TOTAL	4,848,688	650	13.4	786	16.2	45	.9	79	1.6
TEXAS	17,259,688	2,663	15.4	1,958	11.3	144	.8	260	1.5

REPORTED CASES OF GASTROINTESTINAL DISEASES AND RATES PER 100,000 POPULATION
PUBLIC HEALTH REGION 5 - 1991

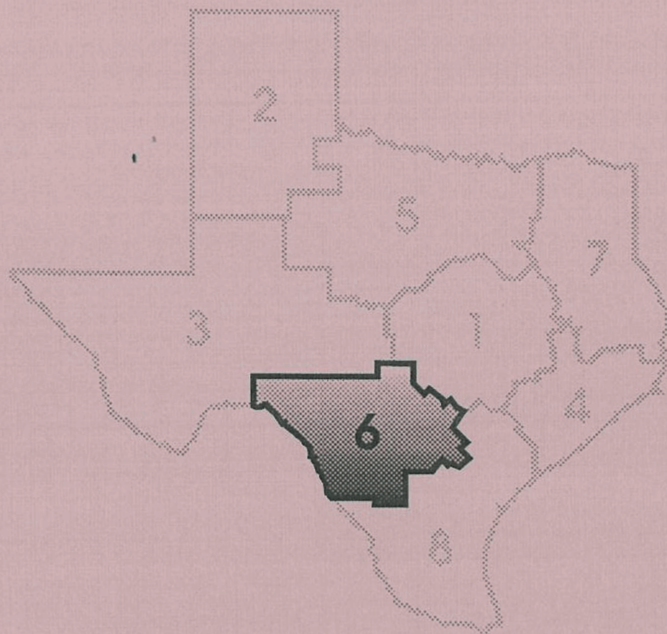
COUNTY	1991 POPULATION	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	AMEBIASIS CASES	AMEBIASIS RATE
ARCHER	8,103	0	.0	0	.0	1	12.3	0	.0
BAYLOR	4,407	1	22.7	0	.0	0	.0	0	.0
BROWN	34,997	5	14.3	2	5.7	3	8.6	0	.0
CALLAHAN	12,178	0	.0	0	.0	0	.0	0	.0
CLAY	10,091	1	9.9	0	.0	0	.0	0	.0
COLEMAN	9,763	1	10.2	0	.0	0	.0	0	.0
COLLIN	275,781	16	5.8	8	2.9	6	2.2	1	.4
COMANCHE	13,499	0	.0	0	.0	0	.0	0	.0
COOKE	31,064	2	6.4	0	.0	0	.0	0	.0
COTTLE	2,264	0	.0	0	.0	0	.0	0	.0
DALLAS	1,870,753	219	11.7	229	12.2	109	5.8	19	1.0
DENTON	282,878	28	9.9	1	.4	7	2.5	0	.0
EASTLAND	18,659	0	.0	0	.0	0	.0	0	.0
ELLIS	86,878	4	4.6	8	9.2	2	2.3	2	2.3
ERATH	28,331	0	.0	2	7.1	0	.0	0	.0
FANNIN	24,933	3	12.0	1	4.0	0	.0	0	.0
FISHER	4,886	0	.0	0	.0	0	.0	0	.0
FOARD	1,805	0	.0	0	.0	0	.0	0	.0
GRAYSON	95,626	14	14.6	12	12.5	9	9.4	0	.0
HARDEMAN	5,322	0	.0	0	.0	0	.0	0	.0
HASKELL	6,868	0	.0	0	.0	0	.0	0	.0
HOOD	29,888	3	10.0	0	.0	1	3.3	0	.0
HUNT	64,889	9	13.9	2	3.1	2	3.1	0	.0
JACK	7,040	0	.0	1	14.2	0	.0	0	.0
JOHNSON	99,675	10	10.0	1	1.0	2	2.0	0	.0
JONES	16,674	2	12.0	0	.0	1	6.0	0	.0
KAUFMAN	53,148	8	15.1	8	15.1	7	13.2	0	.0
KENT	1,014	0	.0	0	.0	0	.0	0	.0
KNOX	4,885	1	20.5	0	.0	0	.0	0	.0
MITCHELL	8,105	1	12.3	0	.0	0	.0	0	.0
MONTAGUE	17,396	0	.0	0	2.0	2	11.5	0	.0
NAVARRO	40,316	5	12.4	3	7.4	6	14.9	0	.0
NOLAN	16,842	0	.0	0	.0	0	.0	0	.0
PALO PINTO	25,050	1	4.0	2	8.0	0	.0	0	.0
PARKER	65,776	21	31.9	11	16.7	6	9.1	0	.0
ROCKWALL	26,630	4	15.0	1	3.8	0	.0	0	.0
RUNNELS	11,393	1	8.8	2	17.6	0	.0	0	.0
SCURRY	19,012	3	15.8	2	10.5	1	5.3	0	.0
SHACKELFORD	3,347	0	.0	0	.0	0	.0	0	.0
SOMERVELL	5,552	2	36.0	0	.0	0	.0	0	.0
STEPHENS	9,169	0	.0	0	.0	0	.0	0	.0
STONEWALL	2,035	1	49.1	0	.0	0	.0	0	.0
TARRANT	1,177,915	119	10.1	112	9.5	62	5.3	3	.3
TAYLOR	120,535	13	10.8	12	10.0	10	8.3	2	1.7
THROCKMORTON	1,892	0	.0	0	.0	1	52.9	0	.0
WICHITA	122,292	12	9.8	4	3.3	4	3.3	0	.0
WILBARGER	15,268	1	6.5	0	.0	0	.0	2	13.1
WISE	35,411	3	8.5	0	.0	1	2.8	0	.0
YOUNG	18,453	0	.0	0	.0		.0	0	.0
REGIONAL TOTAL	4,848,688	514	10.6	424	8.7	243	5.0	29	.6
TEXAS	17,259,688	2,317	13.4	2,178	12.6	810	4.7	86	.5

REPORTED CASES OF SELECTED VACCINE-PREVENTABLE DISEASES AND RATES PER 100,000 POPULATION
PUBLIC HEALTH REGION 5 - 1991

COUNTY	1991 POPULATION	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
ARCHER	8,103	0	.0	0	.0	0	.0	0	.0
BAYLOR	4,407	0	.0	0	.0	0	.0	0	.0
BROWN	34,997	0	.0	0	.0	0	.0	0	.0
CALLAHAN	12,178	0	.0	0	.0	0	.0	0	.0
CLAY	10,091	0	.0	0	.0	0	.0	0	.0
COLEMAN	9,763	0	.0	0	.0	0	.0	0	.0
COLLIN	275,781	12	4.4	0	.0	1	.4	0	.0
COMANCHE	13,499	0	.0	0	.0	0	.0	0	.0
COOKE	31,064	0	.0	0	.0	1	3.2	0	.0
COTTLE	2,264	0	.0	0	.0	0	.0	0	.0
DALLAS	1,870,753	29	1.6	32	1.7	16	.9	3	.2
DENTON	282,878	2	.7	2	.7	2	.7	0	.0
EASTLAND	18,659	0	.0	0	.0	0	.0	0	.0
ELLIS	86,878	0	.0	0	.0	2	2.3	0	.0
ERATH	28,331	1	3.5	1	3.5	0	.0	0	.0
FANNIN	24,933	0	.0	0	.0	0	.0	0	.0
FISHER	4,886	0	.0	0	.0	0	.0	0	.0
FOARD	1,805	0	.0	0	.0	0	.0	0	.0
GRAYSON	95,626	2	2.1	1	1.0	0	.0	0	.0
HARDEMAN	5,322	0	.0	0	.0	0	.0	0	.0
HASKELL	6,868	0	.0	0	.0	0	.0	0	.0
HOOD	29,888	3	10.0	0	.0	0	.0	0	.0
HUNT	64,889	0	.0	0	.0	1	1.5	0	.0
JACK	7,040	0	.0	0	.0	0	.0	0	.0
JOHNSON	99,675	0	.0	4	4.0	1	1.0	1	1.0
JONES	16,674	0	.0	0	.0	1	6.0	0	.0
KAUFMAN	53,148	0	.0	29	54.6	1	1.9	0	.0
KENT	1,014	0	.0	0	.0	0	.0	0	.0
KNOX	4,885	0	.0	0	.0	0	.0	0	.0
MITCHELL	8,105	0	.0	0	.0	0	.0	0	.0
MONTAGUE	17,396	0	.0	2	2.0	0	.0	0	.0
NAVARRO	40,316	0	.0	1	2.5	0	.0	1	2.5
NOLAN	16,842	0	.0	2	11.9	1	5.9	0	.0
PALO PINTO	25,050	0	.0	1	4.0	0	.0	0	.0
PARKER	65,776	1	1.5	1	1.5	2	3.0	0	.0
ROCKWALL	26,630	0	.0	0	.0	0	.0	0	.0
RUNNELS	11,393	0	.0	0	.0	0	.0	0	.0
SCURRY	19,012	0	.0	0	.0	0	.0	0	.0
SHACKELFORD	3,347	0	.0	0	.0	0	.0	0	.0
SOMERVELL	5,552	0	.0	0	.0	0	.0	0	.0
STEPHENS	9,169	0	.0	0	.0	0	.0	0	.0
STONEWALL	2,035	0	.0	0	.0	0	.0	0	.0
TARRANT	1,177,915	10	.8	15	1.3	29	2.5	2	.2
TAYLOR	120,535	0	.0	0	.0	4	3.3	0	.0
THROCKMORTON	1,892	0	.0	0	.0	0	.0	0	.0
WICHITA	122,292	0	.0	1	.8	1	.8	0	.0
WILBARGER	15,268	0	.0	0	.0	0	.0	0	.0
WISE	35,411	0	.0	2	5.6	0	.0	0	.0
YOUNG	18,453	0	.0	2	10.8	0	.0	0	.0
REGIONAL TOTAL	4,848,688	60	1.2	96	2.0	63	1.3	7	.1
TEXAS	17,259,688	294	1.7	363	2.1	143	.8	16	.1

REPORTED CASES OF OTHER SELECTED DISEASES AND RATES PER 100,000 POPULATION
PUBLIC HEALTH REGION 5 - 1991

COUNTY	1991 POPULATION	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P&S SYPHILIS CASES	P&S SYPHILIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
ARCHER	8,103	6	74.0	10	123.4	0	.0	0	.0
BAYLOR	4,407	1	22.7	1	22.7	0	.0	0	.0
BROWN	34,997	39	111.4	27	77.1	1	2.9	3	8.6
CALLAHAN	12,178	8	65.7	3	24.6	0	.0	1	8.2
CLAY	10,091	2	19.8	5	49.5	1	9.9	0	.0
COLEMAN	9,763	8	81.9	5	51.2	0	.0	0	.0
COLLIN	275,781	326	118.2	200	72.5	7	2.5	6	2.2
COMANCHE	13,499	8	59.3	2	14.8	0	.0	0	.0
COOKE	31,064	31	99.8	20	64.4	4	12.9	1	3.2
COTTLE	2,264	3	132.5	3	132.5	0	.0	0	.0
DALLAS	1,870,753	3,260	174.3	11,444	611.7	1,215	64.9	301	16.1
DENTON	282,878	270	95.4	118	41.7	11	3.9	5	1.8
EASTLAND	18,659	2	10.7	6	32.2	0	.0	3	16.1
ELLIS	86,878	102	117.4	86	99.0	20	23.0	7	8.1
ERATH	28,331	7	24.7	3	10.6	0	.0	1	3.5
FANNIN	24,933	56	224.6	31	124.3	3	12.0	0	.0
FISHER	4,886	1	20.5	0	.0	0	.0	1	20.5
FOARD	1,805	0	.0	3	166.2	0	.0	0	.0
GRAYSON	95,626	136	142.2	120	125.5	11	11.5	8	8.4
HARDEMAN	5,322	5	93.9	1	18.8	0	.0	0	.0
HASKELL	6,868	4	58.2	7	101.9	0	.0	1	14.6
HOOD	29,888	15	50.2	3	10.0	0	.0	1	3.3
HUNT	64,889	67	103.3	130	200.3	16	24.7	4	6.2
JACK	7,040	0	.0	0	.0	0	.0	0	.0
JOHNSON	99,675	56	56.2	50	50.2	5	5.0	2	2.0
JONES	16,674	7	42.0	9	54.0	0	.0	0	.0
KAUFMAN	53,148	42	79.0	86	161.8	17	32.0	5	9.4
KENT	1,014	0	.0	0	.0	0	.0	1	98.6
KNOX	4,885	1	20.5	6	122.8	0	.0	0	.0
MITCHELL	8,105	7	86.4	6	74.0	0	.0	0	.0
MONTAGUE	17,396	9	51.7	3	2.0	1	5.7	1	5.7
NAVARRO	40,316	32	79.4	244	605.2	22	54.6	5	12.4
NOLAN	16,842	30	178.1	14	83.1	0	.0	0	.0
PALO PINTO	25,050	4	16.0	8	31.9	1	4.0	2	8.0
PARKER	65,776	12	18.2	7	10.6	3	4.6	3	4.6
ROCKWALL	26,630	2	7.5	5	18.8	1	3.8	0	.0
RUNNELS	11,393	17	149.2	5	43.9	0	.0	2	17.6
SCURRY	19,012	9	47.3	8	42.1	0	.0	0	.0
SHACKELFORD	3,347	3	89.6	3	89.6	0	.0	0	.0
SOMERVELL	5,552	0	.0	0	.0	0	.0	0	.0
STEPHENS	9,169	12	130.9	3	32.7	0	.0	0	.0
STONEWALL	2,035	0	.0	1	49.1	0	.0	0	.0
TARRANT	1,177,915	1,565	132.9	2,457	208.6		.0	113	9.6
TAYLOR	120,535	294	243.9	252	209.1	347	287.9	4	3.3
THROCKMORTON	1,892	0	.0	4	211.4	5	264.3	0	.0
WICHITA	122,292	314	256.8	431	352.4	1	.8	8	6.5
WILBARGER	15,268	13	85.1	15	98.2	37	242.3	4	26.2
WISE	35,411	8	22.6	4	11.3	8	22.6	2	5.6
YOUNG	18,453	1	5.4	3	16.3	0	.0	2	10.8
REGIONAL TOTAL	4,848,688	6,795	140.1	15,852	326.9	1,737	35.8	497	10.3
TEXAS	17,259,688	31,199	180.8	43,282	250.8	4,970	28.8	2,525	14.6



Public Health Region 6

REPORTED CASES OF SELECTED VIRAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 6 - 1991

COUNTY	1991 POPULATION	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	INFLUENZA & FLU-LIKE ILLNESS CASES	INFLUENZA & FLU-LIKE ILLNESS RATE	CHICKENPOX CASES	CHICKENPOX RATE
ATASCOSA	31,108	1	3.2	0	.0	119	382.5	14	45.0
BANDERA	10,829	0	.0	0	.0	0	.0	22	203.2
BEXAR	1,195,510	119	10.0	1	.1	3,163	264.6	1,328	111.1
COMAL	52,786	8	15.2	0	.0	64	121.2	116	219.8
DIMMIT	10,645	0	.0	0	.0	0	.0	0	.0
EDWARDS	2,313	0	.0	0	.0	0	.0	0	.0
FRIO	13,717	0	.0	0	.0	0	.0	10	72.9
GILLESPIE	17,423	0	.0	0	.0	0	.0	0	.0
GUADALUPE	65,979	1	1.5	0	.0	0	.0	69	104.6
KARNES	12,614	3	23.8	0	.0	2	15.9	1	7.9
KENDALL	15,013	0	.0	0	.0	0	.0	0	.0
KERR	37,055	0	.0	0	.0	6	16.2	135	364.3
KINNEY	3,167	0	.0	0	.0	0	.0	12	378.9
LA SALLE	5,374	0	.0	0	.0	0	.0	0	.0
MAVERICK	38,081	0	.0	2	5.3	6	15.8	113	296.7
MEDINA	27,617	0	.0	0	.0	0	.0	10	36.2
REAL	2,454	0	.0	0	.0	0	.0	0	.0
UVALDE	23,810	1	4.2	0	.0	93	390.6	19	79.8
VAL VERDE	39,700	0	.0	0	.0	127	319.9	1	2.5
WILSON	23,047	4	17.4	0	.0	0	.0	0	.0
ZAVALA	12,368	0	.0	0	.0	2,398	19388.7	78	630.7
REGIONAL TOTAL	1,640,610	137	8.4	3	.2	5,978	364.4	1,928	117.5
TEXAS	17,259,688	1,275	7.4	121	.7	386,911	2241.7	19,409	112.5

REPORTED CASES AND RATES OF HEPATITIS PER 100,000 POPULATION

PUBLIC HEALTH REGION 6 - 1991

COUNTY	1991 POPULATION	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS NANB CASES	HEPATITIS NANB RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
ATASCOSA	31,108	4	12.9	4	12.9	0	.0	3	9.6
BANDERA	10,829	0	.0	1	9.2	0	.0	0	.0
BEXAR	1,195,510	281	23.5	182	15.2	4	.3	4	.3
COMAL	52,786	3	5.7	1	1.9	0	.0	0	.0
DIMMIT	10,645	0	.0	0	.0	0	.0	0	.0
EDWARDS	2,313	0	.0	0	.0	0	.0	0	.0
FRIO	13,717	1	7.3	0	.0	0	.0	0	.0
GILLESPIE	17,423	0	.0	0	.0	0	.0	0	.0
GUADALUPE	65,979	21	31.8	7	10.6	0	.0	0	.0
KARNES	12,614	1	7.9	0	.0	0	.0	0	.0
KENDALL	15,013	4	26.6	0	.0	0	.0	0	.0
KERR	37,055	2	5.4	0	.0	0	.0	0	.0
KINNEY	3,167	0	.0	0	.0	0	.0	0	.0
LA SALLE	5,374	0	.0	0	.0	0	.0	0	.0
MAVERICK	38,081	22	57.8	2	5.3	0	.0	0	.0
MEDINA	27,617	4	14.5	2	7.2	1	3.6	0	.0
REAL	2,454	0	.0	0	.0	0	.0	0	.0
UVALDE	23,810	15	63.0	2	8.4	0	.0	0	.0
VAL VERDE	39,700	13	32.7	5	12.6	0	.0	0	.0
WILSON	23,047	1	4.3	0	.0	0	.0	0	.0
ZAVALA	12,368	3	24.3	0	.0	0	.0	1	8.1
REGIONAL TOTAL	1,640,610	375	22.9	206	12.6	5	.3	8	.5
TEXAS	17,259,688	2,663	15.4	1,958	11.3	144	.8	260	1.5

REPORTED CASES OF GASTROINTESTINAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 6 - 1991

COUNTY	1991 POPULATION	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	AMEBIASIS CASES	AMEBIASIS RATE
ATASCOSA	31,108	5	16.1	0	.0	1	3.2	0	.0
BANDERA	10,829	1	9.2	0	.0	0	.0	0	.0
BEXAR	1,195,510	132	11.0	248	20.7	104	8.7	0	.0
COMAL	52,786	7	13.3	18	34.1	5	9.5	0	.0
DIMMIT	10,645	2	18.8	1	9.4	0	.0	0	.0
EDWARDS	2,313	0	.0	0	.0	0	.0	0	.0
FRIO	13,717	0	.0	0	.0	0	.0	0	.0
GILLESPIE	17,423	0	.0	0	.0	0	.0	0	.0
GUADALUPE	65,979	5	7.6	6	9.1	0	.0	0	.0
KARNES	12,614	0	.0	0	.0	0	.0	0	.0
KENDALL	15,013	3	20.0	0	.0	1	6.7	0	.0
KERR	37,055	1	2.7	0	.0	0	.0	0	.0
KINNEY	3,167	0	.0	0	.0	0	.0	0	.0
LA SALLE	5,374	0	.0	0	.0	0	.0	0	.0
MAVERICK	38,081	11	28.9	10	26.3	0	.0	0	.0
MEDINA	27,617	1	3.6	0	.0	0	.0	0	.0
REAL	2,454	0	.0	0	.0	0	.0	0	.0
UVALDE	23,810	16	67.2	15	63.0	0	.0	0	.0
VAL VERDE	39,700	21	52.9	21	52.9	8	20.2	1	2.5
WILSON	23,047	2	8.7	3	13.0	0	.0	0	.0
ZAVALA	12,368	0	.0	0	.0	0	.0	0	.0
REGIONAL TOTAL	1,640,610	207	12.6	322	19.6	119	7.3	1	.1
TEXAS	17,259,688	2,317	13.4	2,178	12.6	810	4.7	86	.5

REPORTED CASES OF SELECTED VACCINE-PREVENTABLE DISEASES AND RATES PER 100,000 POPULATION

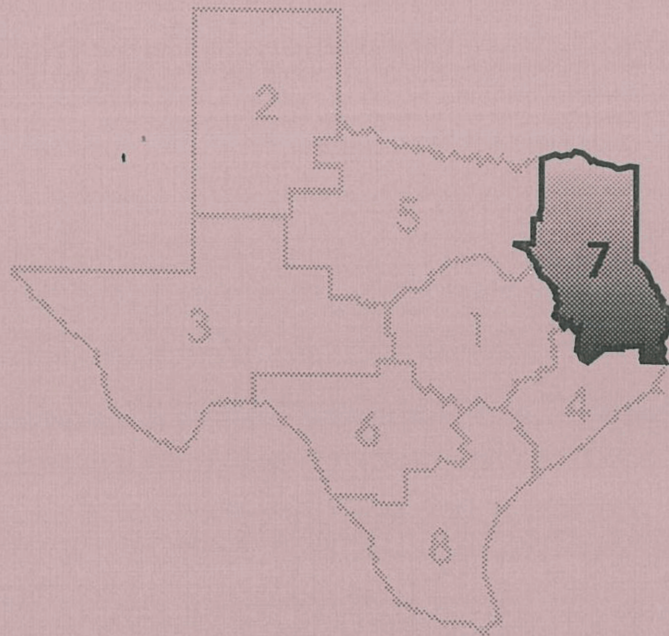
PUBLIC HEALTH REGION 6 - 1991

COUNTY	1991 POPULATION	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
ATASCOSA	31,108	0	.0	0	.0	0	.0	0	.0
BANDERA	10,829	0	.0	0	.0	0	.0	0	.0
BEXAR	1,195,510	8	.7	2	.2	4	.3	1	.1
COMAL	52,786	2	3.8	3	5.7	1	1.9	0	.0
DIMMIT	10,645	0	.0	0	.0	0	.0	0	.0
EDWARDS	2,313	0	.0	0	.0	0	.0	0	.0
FRIO	13,717	0	.0	0	.0	0	.0	0	.0
GILLESPIE	17,423	0	.0	0	.0	0	.0	0	.0
GUADALUPE	65,979	1	1.5	0	.0	0	.0	0	.0
KARNES	12,614	0	.0	0	.0	0	.0	0	.0
KENDALL	15,013	0	.0	1	6.7	0	.0	0	.0
KERR	37,055	0	.0	0	.0	0	.0	0	.0
KINNEY	3,167	0	.0	0	.0	0	.0	0	.0
LA SALLE	5,374	0	.0	0	.0	0	.0	0	.0
MAVERICK	38,081	0	.0	4	10.5	3	7.9	1	2.6
MEDINA	27,617	0	.0	0	.0	0	.0	0	.0
REAL	2,454	0	.0	0	.0	0	.0	0	.0
UVALDE	23,810	0	.0	0	.0	0	.0	0	.0
VAL VERDE	39,700	0	.0	4	10.1	0	.0	0	.0
WILSON	23,047	0	.0	0	.0	0	.0	0	.0
ZAVALA	12,368	0	.0	0	.0	0	.0	0	.0
REGIONAL TOTAL	1,640,610	11	.7	14	.9	8	.5	2	.1
TEXAS	17,259,688	294	1.7	363	2.1	143	.8	16	.1

REPORTED CASES OF OTHER SELECTED DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 6 - 1991

COUNTY	1991 POPULATION	CHLAMYDIA CASES	RATE	GONORRHEA CASES	RATE	P&S SYPHILIS CASES	RATE	TUBERCULOSIS CASES	RATE
ATASCOSA	31,108	16	51.4	3	9.6	1	3.2	5	16.1
BANDERA	10,829	3	27.7	2	18.5	1	9.2	0	.0
BEXAR	1,195,510	1,698	142.0	1,685	140.9	195	16.3	151	12.6
COMAL	52,786	63	119.3	23	43.6	1	1.9	3	5.7
DIMMIT	10,645	11	103.3	0	.0	1	9.4	3	28.2
EDWARDS	2,313	0	.0	0	.0	1	43.2	0	.0
FRIO	13,717	27	196.8	9	65.6	1	7.3	4	29.2
GILLESPIE	17,423	0	.0	0	.0	0	.0	0	.0
GUADALUPE	65,979	44	66.7	33	50.0	0	.0	2	3.0
KARNES	12,614	12	95.1	7	55.5	1	7.9	2	15.9
KENDALL	15,013	3	20.0	0	.0	0	.0	4	26.6
KERR	37,055	9	24.3	38	102.6	0	.0	2	5.4
KINNEY	3,167	0	.0	0	.0	0	.0	0	.0
LA SALLE	5,374	9	167.5	2	37.2	0	.0	0	.0
MAVERICK	38,081	4	10.5	0	.0	1	2.6	9	23.6
MEDINA	27,617	41	148.5	6	21.7	0	.0	0	.0
REAL	2,454	1	40.7	0	.0	0	.0	0	.0
UVALDE	23,810	26	109.2	10	42.0	1	4.2	0	.0
VAL VERDE	39,700	81	204.0	9	22.7	2	5.0	13	32.7
WILSON	23,047	7	30.4	2	8.7	0	.0	1	4.3
ZAVALA	12,368	15	121.3	6	48.5	0	.0	5	40.4
REGIONAL TOTAL	1,640,610	2,070	126.2	1,835	111.8	206	12.6	204	12.4
TEXAS	17,259,688	31,199	180.8	43,282	250.8	4,970	28.8	2,525	14.6



Public Health Region 7

REPORTED CASES OF SELECTED VIRAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 7 - 1991

COUNTY	1991 POPULATION	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	INFLUENZA & FLU-LIKE ILLNESS CASES	INFLUENZA & FLU-LIKE ILLNESS RATE	CHICKENPOX CASES	CHICKENPOX RATE
ANDERSON	48,746	2	4.1	0	.0	133	272.8	30	61.5
ANGELINA	70,981	1	1.4	0	.0	8	11.3	38	53.5
BOWIE	82,041	6	7.3	2	2.4	0	.0	14	17.1
CAMP	10,084	0	.0	0	.0	0	.0	0	.0
CASS	30,472	2	6.6	1	3.3	0	.0	3	9.8
CHEROKEE	41,556	1	2.4	1	2.4	12	28.9	0	.0
DELTA	4,897	0	.0	0	.0	0	.0	0	.0
FRANKLIN	7,977	0	.0	0	.0	0	.0	0	.0
GREGG	106,298	1	.9	0	.0	22	20.7	43	40.5
HARRISON	57,982	2	3.4	0	.0	466	803.7	36	62.1
HENDERSON	59,928	1	1.7	0	.0	0	.0	16	26.7
HOPKINS	29,189	0	.0	0	.0	48	164.4	6	20.6
HOUSTON	21,642	1	4.6	0	.0	132	609.9	82	378.9
JASPER	31,693	0	.0	0	.0	425	1341.0	140	441.7
LAMAR	44,390	1	2.3	0	.0	0	.0	3	6.8
MARION	10,176	0	.0	0	.0	0	.0	0	.0
MORRIS	13,388	0	.0	0	.0	9	67.2	0	.0
NACOGDOCHES	55,335	1	1.8	2	3.6	93	168.1	8	14.5
NEWTON	13,779	0	.0	0	.0	144	1045.1	14	101.6
PANOLA	22,491	0	.0	0	.0	0	.0	0	.0
POLK	31,607	0	.0	0	.0	0	.0	0	.0
RAINS	6,832	0	.0	0	.0	0	.0	0	.0
RED RIVER	14,457	0	.0	0	.0	0	.0	9	62.3
RUSK	44,393	0	.0	0	.0	21	47.3	1	2.3
SABINE	9,696	0	.0	0	.0	0	.0	0	.0
SAN AUGUSTINE	8,110	0	.0	0	.0	0	.0	0	.0
SAN JACINTO	16,818	1	5.9	0	.0	0	.0	0	.0
SHELBY	22,218	0	.0	0	.0	0	.0	0	.0
SMITH	153,304	6	3.9	2	1.3	1,290	841.5	237	154.6
TITUS	24,508	3	12.2	0	.0	0	.0	0	.0
TRINITY	11,659	0	.0	0	.0	0	.0	2	17.2
TYLER	17,026	0	.0	0	.0	0	.0	0	.0
UPSHUR	32,127	0	.0	0	.0	52	161.9	2	6.2
VAN ZANDT	38,819	3	7.7	0	.0	44	113.3	1	2.6
WOOD	30,034	4	13.3	0	.0	1,080	3595.9	20	66.6
REGIONAL TOTAL	1,224,653	36	2.9	8	.7	3,979	324.9	705	57.6
TEXAS	17,259,688	1,275	7.4	121	.7	386,911	2241.7	19,409	112.5

REPORTED CASES AND RATES OF HEPATITIS PER 100,000 POPULATION

PUBLIC HEALTH REGION 7 - 1991

COUNTY	1991 POPULATION	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS NANB CASES	HEPATITIS NANB RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
ANDERSON	48,746	2	4.1	10	20.5	1	2.1	1	2.1
ANGELINA	70,981	0	.0	9	12.7	1	1.4	0	.0
BOWIE	82,041	0	.0	14	17.1	0	.0	1	1.2
CAMP	10,084	0	.0	2	19.8	0	.0	0	.0
CASS	30,472	0	.0	0	.0	0	.0	0	.0
CHEROKEE	41,556	1	2.4	12	28.9	0	.0	0	.0
DELTA	4,897	0	.0	0	.0	0	.0	0	.0
FRANKLIN	7,977	0	.0	2	25.1	0	.0	0	.0
GREGG	106,298	7	6.6	10	9.4	0	.0	1	.9
HARRISON	57,982	4	6.9	4	6.9	1	1.7	0	.0
HENDERSON	59,928	8	13.3	0	.0	0	.0	0	.0
HOPKINS	29,189	2	6.9	1	3.4	0	.0	1	3.4
HOUSTON	21,642	3	13.9	2	9.2	0	.0	0	.0
JASPER	31,693	0	.0	1	3.2	0	.0	0	.0
LAMAR	44,390	1	2.3	10	22.5	0	.0	0	.0
MARION	10,176	0	.0	0	.0	0	.0	0	.0
MORRIS	13,388	1	7.5	1	7.5	0	.0	0	.0
NACOGDOCHES	55,335	5	9.0	12	21.7	0	.0	0	.0
NEWTON	13,779	0	.0	0	.0	0	.0	0	.0
PANOLA	22,491	0	.0	1	4.4	0	.0	0	.0
POLK	31,607	1	3.2	6	19.0	0	.0	0	.0
RAINS	6,832	0	.0	1	14.6	0	.0	0	.0
RED RIVER	14,457	1	6.9	1	6.9	0	.0	0	.0
RUSK	44,393	2	4.5	3	6.8	0	.0	0	.0
SABINE	9,696	0	.0	1	10.3	0	.0	0	.0
SAN AUGUSTINE	8,110	0	.0	1	12.3	0	.0	1	12.3
SAN JACINTO	16,818	1	5.9	1	5.9	0	.0	0	.0
SHELBY	22,218	0	.0	1	4.5	0	.0	0	.0
SMITH	153,304	33	21.5	12	7.8	0	.0	3	2.0
TITUS	24,508	0	.0	3	12.2	0	.0	0	.0
TRINITY	11,659	0	.0	1	8.6	0	.0	0	.0
TYLER	17,026	0	.0	0	.0	0	.0	0	.0
UPSHUR	32,127	2	6.2	3	9.3	0	.0	0	.0
VAN ZANDT	38,819	2	5.2	1	2.6	0	.0	0	.0
WOOD	30,034	0	.0	3	10.0	1	3.3	0	.0
REGIONAL TOTAL	1,224,653	76	6.2	129	10.5	4	.3	8	.7
TEXAS	17,259,688	2,663	15.4	1,958	11.3	144	.8	260	1.5

REPORTED CASES OF GASTROINTESTINAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 7 - 1991

COUNTY	1991 POPULATION	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	AMEBIASIS CASES	AMEBIASIS RATE
ANDERSON	48,746	2	4.1	5	10.3	5	10.3	0	.0
ANGELINA	70,981	2	2.8	6	8.5	3	4.2	0	.0
BOWIE	82,041	16	19.5	14	17.1	1	1.2	0	.0
CAMP	10,084	2	19.8	0	.0	0	.0	0	.0
CASS	30,472	2	6.6	0	.0	0	.0	0	.0
CHEROKEE	41,556	1	2.4	2	4.8	0	.0	0	.0
DELTA	4,897	0	.0	0	.0	0	.0	0	.0
FRANKLIN	7,977	0	.0	0	.0	0	.0	0	.0
GREGG	106,298	17	16.0	21	19.8	0	.0	0	.0
HARRISON	57,982	1	1.7	0	.0	0	.0	0	.0
HENDERSON	59,928	2	3.3	1	1.7	0	.0	0	.0
HOPKINS	29,189	8	27.4	1	3.4	0	.0	0	.0
HOUSTON	21,642	1	4.6	0	.0	0	.0	0	.0
JASPER	31,693	4	12.6	1	3.2	2	6.3	0	.0
LAMAR	44,390	8	18.0	22	49.6	3	6.8	0	.0
MARION	10,176	2	19.7	0	.0	0	.0	0	.0
MORRIS	13,388	0	.0	1	7.5	0	.0	0	.0
NACOGDOCHES	55,335	13	23.5	5	9.0	8	14.5	1	1.8
NEWTON	13,779	0	.0	0	.0	0	.0	0	.0
PANOLA	22,491	0	.0	2	8.9	0	.0	0	.0
POLK	31,607	1	3.2	4	12.7	1	3.2	0	.0
RAINS	6,832	1	14.6	0	.0	0	.0	0	.0
RED RIVER	14,457	2	13.8	0	.0	0	.0	0	.0
RUSK	44,393	0	.0	1	2.3	0	.0	0	.0
SABINE	9,696	2	20.6	0	.0	0	.0	0	.0
SAN AUGUSTINE	8,110	0	.0	0	.0	0	.0	0	.0
SAN JACINTO	16,818	0	.0	1	5.9	0	.0	0	.0
SHELBY	22,218	3	13.5	0	.0	0	.0	0	.0
SMITH	153,304	27	17.6	13	8.5	2	1.3	4	2.6
TITUS	24,508	9	36.7	4	16.3	0	.0	0	.0
TRINITY	11,659	0	.0	0	.0	1	8.6	0	.0
TYLER	17,026	1	5.9	1	5.9	0	.0	0	.0
UPSHUR	32,127	0	.0	1	3.1	0	.0	0	.0
VAN ZANDT	38,819	2	5.2	0	.0	0	.0	0	.0
WOOD	30,034	0	.0	2	6.7	1	3.3	0	.0
REGIONAL TOTAL	1,224,653	129	10.5	108	8.8	27	2.2	5	.4
TEXAS	17,259,688	2,317	13.4	2,178	12.6	810	4.7	86	.5

REPORTED CASES OF SELECTED VACCINE-PREVENTABLE DISEASES AND RATES PER 100,000 POPULATION

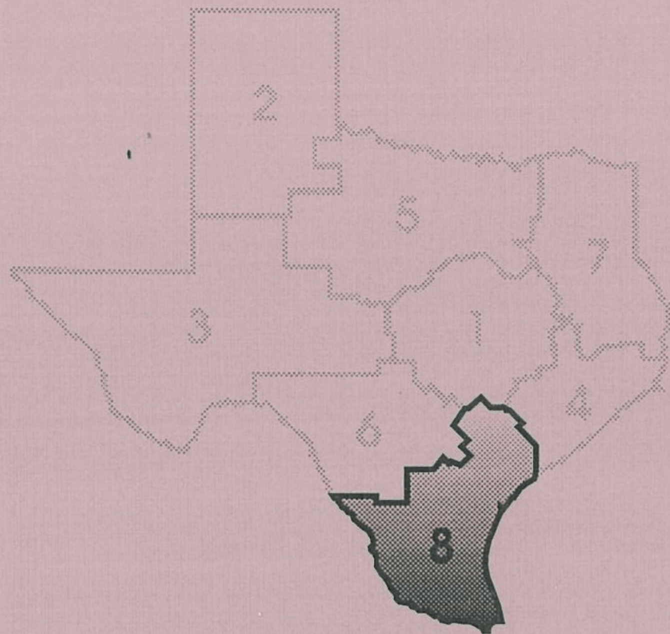
PUBLIC HEALTH REGION 7 - 1991

COUNTY	1991 POPULATION	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
ANDERSON	48,746	0	.0	1	2.1	3	6.2	0	.0
ANGELINA	70,981	1	1.4	0	.0	1	1.4	0	.0
BOWIE	82,041	1	1.2	1	1.2	0	.0	0	.0
CAMP	10,084	0	.0	0	.0	0	.0	0	.0
CASS	30,472	0	.0	0	.0	0	.0	0	.0
CHEROKEE	41,556	0	.0	0	.0	0	.0	0	.0
DELTA	4,897	0	.0	0	.0	0	.0	0	.0
FRANKLIN	7,977	0	.0	2	25.1	0	.0	0	.0
GREGG	106,298	0	.0	0	.0	0	.0	0	.0
HARRISON	57,982	0	.0	1	1.7	0	.0	0	.0
HENDERSON	59,928	0	.0	0	.0	0	.0	0	.0
HOPKINS	29,189	0	.0	1	3.4	0	.0	0	.0
HOUSTON	21,642	0	.0	0	.0	0	.0	0	.0
JASPER	31,693	0	.0	1	3.2	0	.0	0	.0
LAMAR	44,390	0	.0	0	.0	0	.0	0	.0
MARION	10,176	0	.0	1	9.8	0	.0	0	.0
MORRIS	13,388	0	.0	0	.0	0	.0	0	.0
NACOGDOCHES	55,335	2	3.6	0	.0	1	1.8	0	.0
NEWTON	13,779	0	.0	2	14.5	0	.0	0	.0
PANOLA	22,491	0	.0	0	.0	0	.0	0	.0
POLK	31,607	0	.0	0	.0	0	.0	0	.0
RAINS	6,832	0	.0	0	.0	0	.0	0	.0
RED RIVER	14,457	0	.0	1	6.9	0	.0	0	.0
RUSK	44,393	0	.0	0	.0	0	.0	0	.0
SABINE	9,696	0	.0	0	.0	0	.0	0	.0
SAN AUGUSTINE	8,110	5	61.7	0	.0	0	.0	0	.0
SAN JACINTO	16,818	0	.0	0	.0	0	.0	0	.0
SHELBY	22,218	0	.0	0	.0	0	.0	0	.0
SMITH	153,304	0	.0	4	2.6	0	.0	0	.0
TITUS	24,508	0	.0	0	.0	0	.0	0	.0
TRINITY	11,659	0	.0	0	.0	0	.0	0	.0
TYLER	17,026	0	.0	2	11.7	0	.0	0	.0
UPSHUR	32,127	0	.0	1	3.1	0	.0	0	.0
VAN ZANDT	38,819	0	.0	1	2.6	0	.0	0	.0
WOOD	30,034	0	.0	3	10.0	1	3.3	0	.0
REGIONAL TOTAL	1,224,653	9	.7	22	1.8	6	.5	0	.0
TEXAS	17,259,688	294	1.7	363	2.1	143	.8	16	.1

REPORTED CASES OF OTHER SELECTED DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 7 - 1991

COUNTY	1991 POPULATION	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P&S SYPHILIS CASES	P&S SYPHILIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
ANDERSON	48,746	37	75.9	53	108.7	15	30.8	5	10.3
ANGELINA	70,981	53	74.7	82	115.5	41	57.8	12	16.9
BOWIE	82,041	140	170.6	377	459.5	76	92.6	10	12.2
CAMP	10,084	0	.0	5	49.6	1	9.9	3	29.8
CASS	30,472	12	39.4	47	154.2	21	68.9	2	6.6
CHEROKEE	41,556	24	57.8	27	65.0	8	19.3	9	21.7
DELTA	4,897	3	61.3	0	.0	0	.0	0	.0
FRANKLIN	7,977	1	12.5	0	.0	0	.0	0	.0
GREGG	106,298	135	127.0	52	48.9	52	48.9	9	8.5
HARRISON	57,982	89	153.5	370	638.1	17	29.3	1	1.7
HENDERSON	59,928	20	33.4	13	21.7	6	10.0	8	13.3
HOPKINS	29,189	24	82.2	43	147.3	4	13.7	1	3.4
HOUSTON	21,642	38	175.6	42	194.1	13	60.1	2	9.2
JASPER	31,693	32	101.0	142	448.0	3	9.5	1	3.2
LAMAR	44,390	106	238.8	118	265.8	5	11.3	4	9.0
MARION	10,176	16	157.2	12	117.9	0	.0	2	19.7
MORRIS	13,388	14	104.6	12	89.6	4	29.9	0	.0
NACOGDOCHES	55,335	40	72.3	38	68.7	36	65.1	4	7.2
NEWTON	13,779	15	108.9	24	174.2	0	.0	0	.0
PANOLA	22,491	12	53.4	34	151.2	1	4.4	3	13.3
POLK	31,607	31	98.1	37	117.1	10	31.6	2	6.3
RAINS	6,832	2	29.3	0	.0	0	.0	0	.0
RED RIVER	14,457	20	138.3	13	89.9	0	.0	1	6.9
RUSK	44,393	6	13.5	36	81.1	3	6.8	4	9.0
SABINE	9,696	7	72.2	15	154.7	0	.0	0	.0
SAN AUGUSTINE	8,110	3	37.0	21	258.9	3	37.0	1	12.3
SAN JACINTO	16,818	5	29.7	9	53.5	0	.0	7	41.6
SHELBY	22,218	9	40.5	22	99.0	4	18.0	1	4.5
SMITH	153,304	260	169.6	595	388.1	119	77.6	15	9.8
TITUS	24,508	6	24.5	18	73.4	3	12.2	6	24.5
TRINITY	11,659	5	42.9	5	42.9	0	.0	0	.0
TYLER	17,026	9	52.9	35	205.6	2	11.7	3	17.6
UPSHUR	32,127	14	43.6	7	21.8	6	18.7	0	.0
VAN ZANDT	38,819	18	46.4	10	25.8	1	2.6	3	7.7
WOOD	30,034	9	30.0	31	103.2	0	.0	2	6.7
REGIONAL TOTAL	1,224,653	1,215	99.2	2,345	191.5	454	37.1	121	9.9
TEXAS	17,259,688	31,199	180.8	43,282	250.8	4,970	28.8	2,525	14.6



Public Health Region 8

REPORTED CASES OF SELECTED VIRAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 8 - 1991

COUNTY	1991 POPULATION	ASEPTIC MENINGITIS CASES	RATE	ENCEPHALITIS CASES	RATE	INFLUENZA & FLU-LIKE ILLNESS CASES	RATE	CHICKENPOX CASES	RATE
ARANSAS	18,351	2	10.9	0	.0	0	.0	0	.0
BEE	25,519	0	.0	0	.0	43	168.5	28	109.7
BROOKS	8,346	0	.0	0	.0	0	.0	0	.0
CALHOUN	19,294	1	5.2	0	.0	0	.0	0	.0
CAMERON	267,358	12	4.5	2	.7	1,691	632.5	352	131.7
DE WITT	18,991	0	.0	0	.0	1	5.3	13	68.5
DUVAL	13,128	0	.0	0	.0	0	.0	0	.0
GOLIAD	6,071	0	.0	0	.0	0	.0	0	.0
GONZALES	17,450	0	.0	0	.0	0	.0	1	5.7
HIDALGO	395,398	4	1.0	2	.5	29	7.3	235	59.4
JACKSON	13,200	0	.0	0	.0	0	.0	0	.0
JIM HOGG	5,190	0	.0	0	.0	0	.0	0	.0
JIM WELLS	38,090	3	7.9	0	.0	0	.0	0	.0
KENEDY	464	0	.0	0	.0	0	.0	0	.0
KLEBERG	30,757	1	3.3	1	3.3	0	.0	0	.0
LAVACA	18,869	1	5.3	1	5.3	12	63.6	1	5.3
LIVE OAK	9,776	0	.0	0	.0	0	.0	0	.0
MCMULLEN	817	0	.0	0	.0	0	.0	0	.0
NUECES	293,965	24	8.2	0	.0	7,608	2588.1	1,062	361.3
REFUGIO	8,085	0	.0	0	.0	0	.0	0	.0
SAN PATRICIO	59,624	5	8.4	0	.0	314	526.6	42	70.4
STARR	42,042	0	.0	0	.0	0	.0	6	14.3
VICTORIA	75,383	2	2.7	1	1.3	1,375	1824.0	241	319.7
WEBB	137,172	2	1.5	1	.7	14	10.2	75	54.7
WILLACY	18,034	0	.0	0	.0	0	.0	151	837.3
ZAPATA	9,509	0	.0	0	.0	0	.0	0	.0
REGIONAL TOTAL	1,550,883	57	3.7	8	.5	11,087	714.9	2,207	142.3
TEXAS	17,259,688	1,275	7.4	121	.7	386,911	2241.7	19,409	112.5

REPORTED CASES AND RATES OF HEPATITIS PER 100,000 POPULATION

PUBLIC HEALTH REGION 8 - 1991

COUNTY	1991 POPULATION	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS NANB CASES	HEPATITIS NANB RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
ARANSAS	18,351	1	5.4	0	.0	0	.0	0	.0
BEE	25,519	2	7.8	0	.0	0	.0	0	.0
BROOKS	8,346	0	.0	0	.0	0	.0	0	.0
CALHOUN	19,294	0	.0	0	.0	0	.0	0	.0
CAMERON	267,358	82	30.7	11	4.1	4	1.5	17	6.4
DE WITT	18,991	0	.0	2	10.5	0	.0	0	.0
DUVAL	13,128	1	7.6	0	.0	0	.0	0	.0
GOLIAD	6,071	0	.0	2	32.9	0	.0	0	.0
GONZALES	17,450	0	.0	0	.0	0	.0	0	.0
HIDALGO	395,398	49	12.4	5	1.3	0	.0	41	10.4
JACKSON	13,200	0	.0	0	.0	0	.0	0	.0
JIM HOGG	5,190	0	.0	0	.0	0	.0	1	19.3
JIM WELLS	38,090	2	5.3	0	.0	0	.0	0	.0
KENEDY	464	0	.0	0	.0	0	.0	0	.0
KLEBERG	30,757	9	29.3	6	19.5	0	.0	0	.0
LAVACA	18,869	1	5.3	2	10.6	0	.0	0	.0
LIVE OAK	9,776	0	.0	1	10.2	0	.0	0	.0
MCMULLEN	817	0	.0	0	.0	0	.0	0	.0
NUECES	293,965	31	10.5	33	11.2	1	.3	4	1.4
REFUGIO	8,085	0	.0	0	.0	0	.0	0	.0
SAN PATRICIO	59,624	4	6.7	5	8.4	0	.0	0	.0
STARR	42,042	32	76.1	0	.0	1	2.4	2	4.8
VICTORIA	75,383	8	10.6	5	6.6	2	2.7	1	1.3
WEBB	137,172	151	110.1	13	9.5	0	.0	10	7.3
WILLACY	18,034	2	11.1	0	.0	0	.0	1	5.5
ZAPATA	9,509	1	10.5	0	.0	0	.0	0	.0
REGIONAL TOTAL	1,550,883	376	24.2	85	5.5	8	.5	77	5.0
TEXAS	17,259,688	2,663	15.4	1,958	11.3	144	.8	260	1.5

REPORTED CASES OF GASTROINTESTINAL DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 8 - 1991

COUNTY	1991 POPULATION	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	AMEBIASIS CASES	AMEBIASIS RATE
ARANSAS	18,351	3	16.3	1	5.4	0	.0	0	.0
BEE	25,519	1	3.9	0	.0	0	.0	0	.0
BROOKS	8,346	1	12.0	0	.0	0	.0	0	.0
CALHOUN	19,294	2	10.4	1	5.2	0	.0	0	.0
CAMERON	267,358	49	18.3	41	15.3	6	2.2	11	4.1
DE WITT	18,991	3	15.8	0	.0	0	.0	0	.0
DUVAL	13,128	3	22.9	0	.0	1	7.6	0	.0
GOLIAD	6,071	1	16.5	0	.0	0	.0	0	.0
GONZALES	17,450	1	5.7	2	11.5	0	.0	0	.0
HIDALGO	395,398	78	19.7	106	26.8	1	.3	3	.8
JACKSON	13,200	2	15.2	1	7.6	0	.0	0	.0
JIM HOGG	5,190	0	.0	0	.0	0	.0	0	.0
JIM WELLS	38,090	1	2.6	0	.0	1	2.6	0	.0
KENEDY	464	0	.0	0	.0	0	.0	0	.0
KLEBERG	30,757	7	22.8	12	39.0	2	6.5	0	.0
LAVACA	18,869	2	10.6	4	21.2	0	.0	0	.0
LIVE OAK	9,776	0	.0	0	.0	0	.0	0	.0
MCMULLEN	817	0	.0	0	.0	0	.0	0	.0
NUECES	293,965	46	15.6	38	12.9	22	7.5	0	.0
REFUGIO	8,085	0	.0	0	.0	0	.0	0	.0
SAN PATRICIO	59,624	18	30.2	13	21.8	3	5.0	0	.0
STARR	42,042	1	2.4	0	.0	0	.0	0	.0
VICTORIA	75,383	40	53.1	28	37.1	3	4.0	0	.0
WEBB	137,172	32	23.3	35	25.5	1	.7	0	.0
WILLACY	18,034	1	5.5	1	5.5	0	.0	0	.0
ZAPATA	9,509	0	.0	0	.0	0	.0	0	.0
REGIONAL TOTAL	1,550,883	292	18.8	283	18.2	40	2.6	14	.9
TEXAS	17,259,688	2,317	13.4	2,178	12.6	810	4.7	86	.5

REPORTED CASES OF SELECTED VACCINE-PREVENTABLE DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 8 - 1991

COUNTY	1991 POPULATION	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
ARANSAS	18,351	1	5.4	0	.0	0	.0	0	.0
BEE	25,519	0	.0	0	.0	0	.0	0	.0
BROOKS	8,346	3	35.9	0	.0	0	.0	0	.0
CALHOUN	19,294	1	5.2	0	.0	0	.0	0	.0
CAMERON	267,358	8	3.0	9	3.4	0	.0	0	.0
DE WITT	18,991	0	.0	0	.0	0	.0	0	.0
DUVAL	13,128	1	7.6	0	.0	0	.0	0	.0
GOLIAD	6,071	0	.0	0	.0	0	.0	0	.0
GONZALES	17,450	0	.0	0	.0	0	.0	0	.0
HIDALGO	395,398	25	6.3	1	.3	0	.0	0	.0
JACKSON	13,200	0	.0	0	.0	0	.0	0	.0
JIM HOGG	5,190	0	.0	0	.0	0	.0	0	.0
JIM WELLS	38,090	24	63.0	0	.0	0	.0	0	.0
KENEDY	464	1	215.5	0	.0	0	.0	0	.0
KLEBERG	30,757	12	39.0	1	3.3	0	.0	0	.0
LAVACA	18,869	0	.0	0	.0	0	.0	0	.0
LIVE OAK	9,776	0	.0	0	.0	0	.0	0	.0
MCMULLEN	817	0	.0	0	.0	0	.0	0	.0
NUECES	293,965	9	3.1	3	1.0	0	.0	0	.0
REFUGIO	8,085	0	.0	0	.0	0	.0	0	.0
SAN PATRICIO	59,624	1	1.7	0	.0	0	.0	0	.0
STARR	42,042	0	.0	0	.0	0	.0	0	.0
VICTORIA	75,383	1	1.3	1	1.3	0	.0	0	.0
WEBB	137,172	1	.7	0	.0	0	.0	0	.0
WILLACY	18,034	0	.0	0	.0	0	.0	0	.0
ZAPATA	9,509	0	.0	0	.0	0	.0	0	.0
REGIONAL TOTAL	1,550,883	88	5.7	15	1.0	0	.0	0	.0
TEXAS	17,259,688	294	1.7	363	2.1	143	.8	16	.1

REPORTED CASES OF OTHER SELECTED DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 8 - 1991

COUNTY	1991 POPULATION	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P&S SYPHILIS CASES	P&S SYPHILIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
ARANSAS	18,351	31	168.9	3	16.3	0	.0	3	16.3
BEE	25,519	111	435.0	15	58.8	2	7.8	3	11.8
BROOKS	8,346	7	83.9	5	59.9	0	.0	0	.0
CALHOUN	19,294	3	15.5	1	5.2	3	15.5	2	10.4
CAMERON	267,358	611	228.5	82	30.7	7	2.6	90	33.7
DE WITT	18,991	4	21.1	11	57.9	0	.0	1	5.3
DUVAL	13,128	22	167.6	2	15.2	0	.0	0	.0
GOLIAD	6,071	2	32.9	9	148.2	0	.0	2	32.9
GONZALES	17,450	94	538.7	31	177.7	2	11.5	1	5.7
HIDALGO	395,398	615	155.5	70	17.7	3	.8	135	34.1
JACKSON	13,200	1	7.6	17	128.8	1	7.6	2	15.2
JIM HOGG	5,190	1	19.3	0	.0	0	.0	0	.0
JIM WELLS	38,090	74	194.3	11	28.9	3	7.9	3	7.9
KENEDY	464	0	.0	0	.0	0	.0	0	.0
KLEBERG	30,757	54	175.6	15	48.8	0	.0	8	26.0
LAVACA	18,869	10	53.0	13	68.9	6	31.8	1	5.3
LIVE OAK	9,776	26	266.0	2	20.5	0	.0	1	10.2
MCMULLEN	817	0	.0	0	.0	0	.0	0	.0
NUECES	293,965	542	184.4	516	175.5	37	12.6	43	14.6
REFUGIO	8,085	10	123.7	1	12.4	0	.0	0	.0
SAN PATRICIO	59,624	80	134.2	20	33.5	3	5.0	5	8.4
STARR	42,042	2	4.8	2	4.8	1	2.4	13	30.9
VICTORIA	75,383	90	119.4	125	165.8	4	5.3	7	9.3
WEBB	137,172	124	90.4	23	16.8	3	2.2	43	31.3
WILLACY	18,034	23	127.5	11	61.0	0	.0	5	27.7
ZAPATA	9,509	2	21.0	0	.0	0	.0	7	73.6
REGIONAL TOTAL	1,550,883	2,539	163.7	985	63.5	75	4.8	375	24.2
TEXAS	17,259,688	31,199	180.8	43,282	250.8	4,970	28.8	2,525	14.6

APPENDIX

Table I

Reported Cases of Selected Diseases in Texas 1982-1991

DISEASE	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982
AMEBIASIS	86	139	159	252	290	394	279	356	412	493
BOTULISM	4	7	4	4	4	5	4	9	3	1
BRUCELLOSIS	36'	18	23	22	51	18	47	26	84	27
CAMPYLOBACTERIOSIS	810	739	625	745	780	803	666	198	-	-
CHICKENPOX	19,409	26,636	23,722	20,085	23,228	23,221	20,758	16,124	15,031	11,050
CHOLERA	1	0								
COCCIDIOIDOMYCOSIS	42	52	46	56	45	50	21	4	-	-
DENGUE	2	0	2	0	0	17	1	0	0	2
ENCEPHALITIS	121	74	60	74	118	191	144	114	163	179
GONORRHEA	43,282	43,231	45,786	45,639	51,688	63,376	66,728	65,802	76,903	81,580
HANSEN'S DISEASE	38	37	25	35	31	29	28	31	35	29
H. INFLUENZAE INFECTIONS	152	625	797	843	747	647	554	524	394	439
HEPATITIS A	2,663	2,722	3,211	2,739	1,886	2,137	2,565	2,605	3,030	3,226
HEPATITIS B	1,958	1,789	1,853	1,654	1,487	1,500	1,513	1,544	1,234	1,043
HEPATITIS NA-NB	144	130	236	149	161	205	178	144	-	-
HEPATITIS UNSPECIFIED	260	287	530	576	599	854	1290	1695	2387	2071
HISTOPLASMOSIS	66	142	106	133	71	77	44	10	-	-
INFLUENZA & FLU-LIKE ILLNESS	386,911	314,372	134,604	109,871	62,192	83,524	96,164	176,900	92,160	93,736
LEGIONELLOSIS	23	25	50	20	38	41	29	24	-	-
LEPTOSPIROSIS	0	1	0	0	1	6	6	4	4	18
LISTERIOSIS	52	32	40	45	42	28	-	-	-	-
LYME DISEASE	57	44	82	25	33	9	-	-	-	-
MALARIA	75	80	79	73	56	84	93	77	54	55
MEASLES	294	4,409	3,313	286	452	398	450	642	37	129
MENINGITIS, ASEPTIC	1275	811	836	675	758	1383	989	645	1175	785
MENINGITIS, OTHER/BACTERIAL	337	345	371	385	354	533	423	301	-	-
MENINGOCOCCAL INFECTIONS	100	93	93	98	126	138	132	180	188	238
MUMPS	363	470	551	327	338	239	321	219	225	255
PERTUSSIS	143	158	366	158	111	112	379	60	95	79
PSITTACOSIS	4	2	1	2	2	4	1	9	7	8
REYE SYNDROME	0	4	5	8	9	8	13	17	25	-
ROCKY MOUNTAIN SPOTTED FEVER	2	6	19	22	22	21	33	53	108	64
RUBELLA	16	99	64	30	5	78	52	75	117	120
SALMONELLOSIS	2,317	2,315	2,277	2,334	2,803	2,445	2,442	2,339	2,838	2,506
SHIGELLOSIS	2,178	3,550	1,654	2,826	2,087	2,454	1,718	1,659	2,206	2,173
SYPHILIS, PRIMARY/SECONDARY	4,970	5,165	4,267	3,124	3,071	3,967	4,610	5,136	6,254	6,338
TETANUS	10	7	5	6	5	12	9	10	8	8
TOXIC SHOCK SYNDROME	14	9	15	29	21	18	27	22	29	31
TRICHINOSIS	1	0	0	0	0	2	3	13	4	2
TUBERCULOSIS	2,525	2,242	1,915	1,901	1,757	1,890	1,891	1,762	1,965	2,045
TULAREMIA	3	3	1	3	5	8	8	9	13	16
TYPHOID FEVER	31	28	20	30	36	28	32	30	72	42
TYPHUS FEVER, MURINE	22	36	30	30	34	52	25	37	46	41
VIBRIO INFECTIONS	25	25	17	27	20	-	-	-	-	-

Table II

Reported Cases of Selected Diseases in Texas per 100,000 Population 1982-1991

DISEASE	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982
AMEBIASIS	.5	.8	.9	1.5	1.7	2.4	1.7	2.3	2.7	3.3
BOTULISM	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
BRUCELLOSIS	.2	.1	.1	.1	.3	.1	.3	.2	.6	.2
CAMPYLOBACTERIOSIS	4.7	4.4	3.6	4.3	4.6	4.8	4.1	1.3	-	-
CHICKENPOX	112.5	156.8	135.8	116.3	162.3	138.6	128.7	102.7	98.0	73.9
CHOLERA	.0	.0								
COCCIDIOIDOMYCOSIS	.2	.3	.3	.3	.3	.3	.1	.0	-	-
DENGUE	.0	.0	.0	.0	.0	.1	.0	.0	.0	.0
ENCEPHALITIS	.7	.4	.3	.4	.7	1.1	.9	.7	1.0	1.1
GONORRHEA	250.8	254.5	262.1	264.3	303.6	378.3	413.7	419.1	501.1	545.9
HANSEN'S DISEASE	.2	.2	.1	.2	.2	.2	.2	.2	.2	.2
H. INFLUENZAE INFECTIONS	.9	3.7	4.6	4.9	4.4	3.9	3.4	3.3	-	-
HEPATITIS A	15.4	16.0	18.4	15.9	11.1	12.8	15.9	16.6	19.7	21.6
HEPATITIS B	11.3	10.5	10.6	9.6	8.7	9.0	9.4	9.8	8.0	7.0
HEPATITIS NA-NB	.8	.8	1.4	.9	1.0	1.2	1.1	.9	-	-
HEPATITIS UNSPECIFIED	1.5	1.7	3.0	3.3	3.5	5.1	8.0	10.8	15.6	13.9
HISTOPLASMOSIS	.4	.8	.6	.8	.4	.5	.3	.1	-	-
INFLUENZA & FLU-LIKE ILLNESS	2241.7	1850.7	770.5	636.3	365.3	498.5	596.2	1126.7	600.6	627.3
LEGIONELLOSIS	.1	.1	.3	.1	.2	.2	.2	.2	-	-
LEPTOSPIROSIS	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1
LISTERIOSIS	.3	.2	.2	.3	.3	.2	-	-	-	-
LYME DISEASE	.3	.3	.5	.1	.2	.1	-	-	-	-
MEASLES	1.7	26.0	19.0	1.7	2.7	2.4	2.8	4.1	.2	.9
MENINGITIS, ASEPTIC	7.4	4.8	4.8	3.9	4.5	8.3	6.1	4.1	7.7	5.3
MENINGITIS, OTHER/BACTERIAL	2.0	2.0	2.1	2.2	2.1	3.2	2.6	1.9	-	-
MENINGOCOCCAL INFECTIONS	.6	.5	.5	.6	.7	.8	.8	1.2	1.2	1.6
MUMPS	2.1	2.8	3.2	1.9	2.0	1.4	2.0	1.4	1.5	1.7
PERTUSSIS	.8	.9	2.1	.9	.7	.7	2.4	.4	.6	.5
PSITTACOSIS	.0	.0	.0	.0	.0	.0	.0	.1	.1	.1
REYE SYNDROME	.0	.0	.0	.1	.1	.1	.1	.1	-	-
ROCKY MOUNTAIN SPOTTED FEVER	.0	.0	.1	.1	.1	.1	.2	.3	.7	.4
RUBELLA	.1	.6	.4	.2	.0	.5	.3	.5	.8	.8
SALMONELLOSIS	13.4	13.6	13.0	13.5	16.5	14.6	15.1	14.9	18.5	16.8
SHIGELLOSIS	12.6	20.9	9.5	16.4	12.3	14.7	10.7	10.6	14.4	14.5
SYPHILIS, PRIMARY/SECONDARY	28.8	30.4	24.4	18.1	18.0	23.7	28.6	32.7	40.8	42.4
TETANUS	.1	.0	.0	.0	.1	.1	.2	.1	-	-
TOXIC SHOCK SYNDROME	.1	.1	.1	.2	.0	.1	.1	.1	.1	.1
TRICHINOSIS	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0
TUBERCULOSIS	14.6	13.2	11.0	11.0	10.3	11.3	11.7	11.2	12.8	13.7
TULAREMIA	.0	.0	.0	.0	.0	.1	.1	.1	.1	.1
TYPHOID FEVER	.2	.2	.1	.2	.2	.2	.2	.2	.5	.3
TYPHUS FEVER, MURINE	.1	.2	.2	.2	.2	.3	.2	.2	.3	.3
VIBRIO INFECTIONS	.1	.1	.1	.2	.1	-	-	-	-	-

1991 Estimated Texas Population = 17,259,688

Table III

Reported Cases of Selected Diseases by Month of Onset
Texas, 1991

DISEASE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
AMEBIASIS	11	9	2	5	12	16	6	2	6	6	6	5
BOTULISM	0	1	0	0	1	0	0	1	1	0	0	0
BRUCELLOSIS	2	1	4	1	8	2	7	5	1	2	2	1
CAMPYLOBACTERIOSIS	46	43	55	67	77	84	117	105	80	67	41	28
CHICKENPOX *	951	1,992	3,062	2,924	2,694	2,267	1,423	259	174	442	1,085	2,136
COCCIDIOIDOMYCOSIS	7	1	3	5	4	3	5	2	5	5	2	0
DENGUE	0	0	0	0	1	0	0	0	1	0	0	0
ENCEPHALITIS	3	2	7	9	7	3	13	34	22	10	6	5
GONORRHEA *	3,889	2,582	3,822	3,047	3,141	4,089	3,511	4,394	4,294	3,980	3,585	2,948
HANSEN'S DISEASE	4	1	3	2	5	6	5	3	1	6	0	2
H. INFLUENZAE INFECTIONS	32	23	17	11	9	15	6	2	9	8	8	12
HEPATITIS A	397	318	241	262	208	168	204	192	208	207	143	115
HEPATITIS B	140	150	150	166	186	164	189	179	155	192	123	164
HEPATITIS NA-NB	12	9	13	15	7	15	19	12	8	9	12	13
HEPATITIS UNSPECIFIED	28	34	18	33	22	16	15	20	20	20	17	17
HISTOPLASMOSIS	2	5	8	3	9	7	7	7	7	2	5	4
INFLUENZA •	53,241	44,836	18,012	6,949	1,997	3,163	1,444	936	1,407	7,015	177,833	70,078
LEGIONELLOSIS	3	2	2	1	3	0	1	2	2	3	2	2
LISTERIOSIS	7	4	6	5	6	2	6	4	5	4	2	1
LYME DISEASE	0	6	6	6	5	6	10	6	6	5	0	1
MALARIA	14	2	7	6	5	2	8	13	9	5	2	2
MEASLES	11	20	24	30	69	33	17	37	14	6	5	28
MENINGITIS, ASEPTIC	44	43	42	113	210	286	184	113	108	59	39	34
MENINGITIS, OTHER/BACTERIAL	48	42	36	38	33	21	23	29	22	20	13	12
MENINGOCOCCAL INFECTIONS	13	12	7	6	8	10	6	2	8	3	7	18
MUMPS	47	54	32	58	31	14	14	22	15	26	31	19
PERTUSSIS	15	23	7	21	5	17	24	9	7	5	7	3
PSITTACOSIS	0	0	0	0	0	0	0	0	0	0	1	3
REYE SYNDROME	0	0	0	0	0	0	0	0	0	0	0	0
RMSF	0	0	0	0	0	1	1	0	0	0	0	0
RUBELLA	1	3	1	1	2	0	0	1	2	1	0	4
SALMONELLOSIS	116	86	91	146	167	245	325	273	344	223	159	142
SHIGELLOSIS	167	131	155	129	167	213	280	270	254	185	128	99
SYPHILIS, PRIMARY/SECONDARY *	419	353	481	381	413	486	418	361	400	400	334	524
TOXIC SHOCK SYNDROME	2	0	1	1	4	1	1	1	0	1	1	1
TETANUS	0	0	0	0	0	0	2	3	2	2	1	0
TUBERCULOSIS •	234	189	200	197	207	149	269	216	212	183	130	339
TULAREMIA	0	0	0	0	0	1	1	0	0	1	0	0
TYPHOID FEVER	4	1	1	3	0	7	2	7	1	3	0	2
TYPHUS FEVER, MURINE	0	1	2	3	2	5	3	0	0	1	3	2
VIBRIO INFECTIONS	0	0	1	4	5	2	6	1	3	2	1	0

* TOTALS ARE BY MONTH OF REPORT RATHER THAN MONTH OF ONSET

Table IV

Reported Cases of Selected Diseases in Texas by Age Group, 1991

DISEASE	TOTAL 1991	< 1	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60+	UNK
AMEBIASIS	86	2	8	4	3	2	14	21	10	9	5	8
BOTULISM	4	4	0	0	0	0	0	0	0	0	0	0
BRUCELLOSIS	36	0	1	2	3	5	4	5	7	4	2	3
CAMPYLOBACTERIOSIS	810	62	119	49	23	39	173	116	67	34	79	49
CHICKENPOX *	19409	500	2866	8056	1444	763	*	*	*	*	*	5780
COCCIDIOIDOMYCOSIS	42	0	0	0	0	0	6	5	7	5	9	10
DENGUE	2	1	0	0	0	0	1	0	0	0	0	0
ENCEPHALITIS	121	7	9	9	4	5	18	18	18	11	21	1
GONORRHEA	43282	------------>		75	766	12914	20297	6910	2320	------------------>		
HANSEN'S DISEASE	38	0	0	0	0	0	2	5	4	11	14	2
H. INFLUENZAE INFECTIONS	152	76	48	9	1	0	1	0	1	5	8	3
HEPATITIS A	2663	12	226	721	411	196	449	325	105	48	102	68
HEPATITIS B	1958	8	15	13	21	109	622	558	237	88	114	173
HEPATITIS NA-NB	144	0	0	2	1	7	39	52	24	9	8	2
HEPATITIS UNSPECIFIED	260	5	10	37	37	23	52	46	22	11	15	2
HISTOPLASMOSIS	66	0	0	0	0	0	9	17	14	5	16	5
LEGIONELLOSIS	23	0	0	1	0	0	0	4	3	4	11	0
LISTERIOSIS	52	16	2	0	1	0	5	5	1	7	15	0
LYME DISEASE	57	0	1	2	2	1	3	23	14	6	4	1
MALARIA	75	0	8	4	3	3	26	16	10	3	1	1
MEASLES	294	63	97	19	4	33	65	11	1	1	0	0
MENINGITIS, ASEPTIC	1275	401	135	151	96	55	191	153	40	15	22	16
MENINGITIS, OTHER/BACTERIAL	337	90	27	15	9	6	28	48	25	22	61	6
MENINGOCOCCAL INFECTIONS	100	18	18	12	9	12	9	5	6	6	5	0
MUMPS	363	1	57	116	106	39	19	12	4	3	3	3
PERTUSSIS	143	83	28	8	4	2	10	5	1	2	0	0
PSITTACOSIS	4	0	1	0	0	0	0	1	1	0	1	0
REYE SYNDROME	0	0	0	0	0	0	0	0	0	0	0	0
RMSF	2	0	0	0	0	0	1	0	0	1	0	0
RUBELLA	16	1	3	0	2	3	2	4	1	0	0	0
SALMONELLOSIS	2317	489	450	167	86	61	212	180	136	115	241	180
SHIGELLOSIS	2178	63	742	493	118	63	242	182	47	48	76	104
SYPHILIS	4970	------------>		2	31	607	2123	1488	719	------------------>		
TETANUS	10	0	0	1	0	0	0	1	0	2	6	0
TOXIC SHOCK SYNDROME	14	0	0	0	1	3	4	3	1	2	0	0
TULAREMIA	3	0	0	0	0	0	1	0	0	1	1	0
TYPHOID FEVER	31	0	3	4	2	5	8	6	3	0	0	0
TYPHUS FEVER, MURINE	22	0	1	1	0	4	3	4	4	1	4	0
VIBRIO INFECTIONS	25	1	0	1	1	0	3	3	5	2	9	0

* TOTAL FOR 15-19 YR OLDS INCLUDES ALL CASES 15 YEARS OF AGE AND OLDER

Table V

Reported Cases of Selected Diseases in Texas per 100,000 Population by Age Group, 1991

DISEASE	TOTAL 1991	< 1	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60+	UNK
AMEBIASIS	.5	.8	.7	.3	.2	.2	.5	.7	.5	.6	.2	-
BOTULISM	.0	1.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	-
BRUCELLOSIS	.2	.0	.1	.1	1.2	.4	.1	.2	.3	.3	.1	-
CAMPYLOBACTERIOSIS	4.7	25.2	10.3	3.5	9.3	3.0	6.1	3.9	3.1	2.3	3.3	-
CHICKENPOX *	112.5	203.0	248.2	571.2	109.7	5.8	.0	.0	.0	.0	.0	-
COCCIDIOIDOMYCOSIS	.2	.0	.0	.0	.0	.0	.2	.2	.3	.3	.4	-
DENGUE	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	-
ENCEPHALITIS	.7	2.8	.8	.6	.3	.4	.6	.6	.8	.8	.9	-
GONORRHEA	250.8	------------>		2.7	58.2	978.7	712.5	234.3	38.6	.0	.0	-
HANSEN'S DISEASE	.2	.0	.0	.0	.0	.0	.1	.2	.2	.8	.6	-
H. INFLUENZAE INFECTIONS	.9	30.9	4.2	.6	.1	.0	.0	.0	.0	.3	.3	-
HEPATITIS A	15.4	4.9	19.6	51.1	31.2	14.9	15.8	11.0	4.9	3.3	4.3	-
HEPATITIS B	11.3	3.2	1.3	.9	1.6	8.3	21.8	18.9	11.0	6.0	4.8	-
HEPATITIS NA-NB	.8	.0	.0	.1	.1	.5	1.4	1.8	1.1	.6	.3	-
HEPATITIS UNSPECIFIED	1.5	2.0	.9	2.6	2.8	1.7	1.8	1.6	1.0	.8	.6	-
HISTOPLASMOSIS	.4	.0	.0	.0	.0	.0	.3	.6	.6	.3	.7	-
LEGIONELLOSIS	.1	.0	.0	.1	.0	.0	.0	.1	.1	.3	.5	-
LISTERIOSIS	.3	6.5	.2	.0	.1	.0	.2	.2	.0	.5	.6	-
LYME DISEASE	.3	.0	.1	.1	.2	.1	.1	.8	.6	.4	.2	-
MALARIA	.4	.0	.7	.3	.2	.2	.9	.5	.5	.2	.0	-
MEASLES	1.7	25.6	8.4	1.3	.3	2.5	2.3	.4	.0	.1	.0	-
MENINGITIS, ASEPTIC	7.4	162.8	11.7	10.7	7.3	4.2	6.7	5.2	1.8	1.0	.9	-
MENINGITIS, OTHER/BACTERIAL	2.0	36.5	2.3	1.1	.7	.5	1.0	1.6	1.2	1.5	2.5	-
MENINGOCOCCAL INFECTIONS	.6	7.3	1.6	.9	.7	.9	.3	.2	.3	.4	.2	-
MUMPS	2.1	.4	4.9	8.2	8.1	3.0	.7	.4	.2	.2	.1	-
PERTUSSIS	.8	33.7	2.4	.6	.3	.2	.4	.2	.0	.1	.0	-
PSITTACOSIS	.0	.0	.1	.0	.0	.0	.0	.0	.0	.0	.0	-
REYE SYNDROME	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	-
RMSF	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	-
RUBELLA	.0	.4	.0	.0	.0	.0	.0	.0	.0	.0	.0	-
SALMONELLOSIS	13.4	198.5	39.0	11.8	6.5	4.6	7.4	6.1	6.3	7.9	10.1	-
SHIGELLOSIS	12.6	25.6	64.2	35.0	9.0	4.8	8.5	6.2	2.2	3.3	3.2	-
SYPHILIS, PRIMARY/SECONDARY	28.8	------------>		.1	2.4	46.0	74.5	50.4	12.0	.0	.0	-
TETANUS	.1	.0	.0	.1	.0	.0	.0	.0	.0	.1	.3	-
TOXIC SHOCK SYNDROME	.0	.0	.0	.0	.1	.2	.1	.1	.0	.1	.0	-
TULAREMIA	.0	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	-
TYPHOID FEVER	.2	.0	.3	.3	.2	.4	.3	.2	.1	.0	.0	-
TYPHUS FEVER, MURINE	.1	.0	.1	.1	.0	.3	.1	.1	.2	.1	.2	-
VIBRIO INFECTIONS	.1	.4	.0	.1	.1	.0	.1	.1	.2	.1	.4	-

* RATE FOR CHICKENPOX FOR 15-19 YR OLDS INCLUDES ALL CASES 15 YEARS OF AGE AND OLDER

Table VI

Reported Cases of Selected Diseases in Texas by Public Health Region, 1991

DISEASE	TOTAL 1991	PHR 1	PHR 2	PHR 3	PHR 4	PHR 5	PHR 6	PHR 7	PHR 8
AMEBIASIS	86	23	5	3	6	29	1	5	14
BOTULISM	4	0	0	1	0	3	0	0	0
BRUCELLOSIS	36	1	2	0	4	5	6	0	18
CAMPYLOBACTERIOSIS	810	104	63	43	171	243	119	27	40
CHICKENPOX	19,409	1,508	1,113	1,842	6,474	3,632	1,928	705	2,207
COCCIDIOIDOMYCOSIS	42	4	4	13	4	7	2	2	6
DENGUE	2	0	0	1	0	1	0	0	0
ENCEPHALITIS	121	4	5	5	69	19	3	8	8
GONORRHEA	43,282	4,386	1,119	900	15,860	15,852	1,835	2,345	985
HANSEN'S DISEASE	38	0	0	3	5	12	4	7	7
H. INFLUENZAE INFECTIONS	152	16	4	11	45	46	9	7	14
HEPATITIS A	2,663	188	157	316	525	650	375	76	376
HEPATITIS B	1,958	154	87	128	383	786	206	129	85
HEPATITIS NA-NB	144	31	13	8	30	45	5	4	8
HEPATITIS UNSPECIFIED	260	7	5	22	54	79	8	8	77
HISTOPLASMOSIS	66	15	1	1	10	24	5	8	2
INFLUENZA/FLU-LIKE ILLNESS	386,911	7,945	13,649	6,066	319,478	18,729	5,978	3,979	11,087
LEGIONELLOSIS	23	1	2	1	4	10	1	2	2
LISTERIOSIS	52	2	2	2	22	13	5	4	2
LYME DISEASE	57	10	0	1	3	30	0	11	2
MALARIA	75	5	0	0	29	36	2	1	2
MEASLES	294	49	57	5	15	60	11	9	88
MENINGITIS, ASEPTIC	1275	83	33	38	568	323	137	36	57
MENINGITIS, OTHER/BACTERIAL	337	37	10	21	106	76	27	30	30
MENINGOCOCCAL INFECTIONS	100	17	6	0	32	31	5	7	2
MUMPS	363	30	20	74	92	96	14	22	15
PERTUSSIS	143	44	8	7	7	63	8	6	0
PSITTACOSIS	4	3	0	1	0	0	0	0	0
RABIES (HUMAN)	1	0	0	0	0	0	0	0	1
RMSF	2	1	0	0	0	1	0	0	0
RUBELLA	16	0	5	2	0	7	2	0	0
SALMONELLOSIS	2,316	271	174	252	478	514	206	129	292
SHIGELLOSIS	2,177	215	113	130	583	424	322	108	282
SYPHILIS, PRIMARY/SECONDARY	4,970	320	38	64	2,076	1,737	206	454	75
TETANUS	10	2	1	0	2	4	0	1	0
TOXIC SHOCK SYNDROME	14	0	1	0	6	5	0	2	0
TUBERCULOSIS	2525	200	64	191	873	497	204	121	375
TULAREMIA	3	0	0	0	1	2	0	0	0
TYPHOID FEVER	31	0	0	5	12	13	1	0	0
TYPHUS FEVER, ENDEMIC	22	0	0	0	0	3	0	0	19
VIBRIO INFECTIONS	25	1	0	0	13	5	3	0	3

Table VII

Reported Cases of Selected Diseases in Texas per 100,000 Population by Public Health Region, 1991

DISEASE	TOTAL 1991	PHR 1	PHR 2	PHR 3	PHR 4	PHR 5	PHR 6	PHR 7	PHR 8
AMEBIASIS	.5	1.3	.7	.3	.1	.6	.1	.4	.9
BOTULISM	.0	.0	.0	.1	.0	.1	.0	.0	.0
BRUCELLOSIS	.2	.1	.3	.0	.1	.1	.4	.0	1.2
CAMPYLOBACTERIOSIS	4.7	5.9	8.5	3.7	3.9	5.0	7.3	2.2	2.6
CHICKENPOX	112.5	85.6	150.0	160.4	149.0	74.9	117.5	57.6	142.3
COCCIDIOIDOMYCOSIS	.2	.2	.5	1.1	.1	.1	.1	.2	.4
DENGUE	.0	.0	.0	.1	.0	.0	.0	.0	.0
ENCEPHALITIS	.7	.2	.7	.4	1.6	.4	.2	.7	.5
GONORRHEA	250.8	249.1	150.8	78.4	365.1	326.9	111.8	191.5	63.5
HANSEN'S DISEASE	.2	.0	.0	.3	.1	.2	.2	.6	.5
H. INFLUENZAE INFECTIONS	.9	.9	.5	1.0	1.0	.9	.5	.6	.9
HEPATITIS A	15.4	10.7	21.2	27.5	12.1	13.4	22.9	6.2	24.2
HEPATITIS B	11.3	8.7	11.7	11.1	8.8	16.2	12.6	10.5	5.5
HEPATITIS NA-NB	.8	1.8	1.8	.7	.7	.9	.3	.3	.5
HEPATITIS UNSPECIFIED	1.5	.4	.7	1.9	1.2	1.6	.5	.7	5.0
HISTOPLASMOSIS	.4	.9	.1	.1	.2	.5	.3	.7	.1
INFLUENZA	2241.7	451.2	1839.8	528.3	7354.7	386.3	364.4	324.9	714.9
LEGIONELLOSIS	.1	.1	.3	.1	.1	.2	.1	.2	.1
LISTERIOSIS	.3	.1	.3	.2	.5	.3	.3	.3	.1
LYME DISEASE	.3	.6	.0	.1	.1	.6	.0	.9	.1
MEASLES	1.7	2.8	7.7	.4	.3	1.2	.7	.7	5.7
MENINGITIS, ASEPTIC	7.4	4.7	4.4	3.3	13.1	6.7	8.4	2.9	3.7
MENINGITIS, OTHER/BACTERIAL	2.0	2.1	1.3	1.8	2.4	1.6	1.6	2.4	1.9
MENINGOCOCCAL INFECTIONS	.6	1.0	.8	.0	.7	.6	.3	.6	.1
MUMPS	2.1	1.7	2.7	6.4	2.1	2.0	.9	1.8	1.0
PERTUSSIS	.8	2.5	1.1	.6	.2	1.3	.5	.5	.0
PSITTACOSIS	.0	.2	.0	.1	.0	.0	.0	.0	.0
RABIES (HUMAN)	.0	.0	.0	.0	.0	.0	.0	.0	.1
RMSF	.0	.1	.0	.0	.0	.0	.0	.0	.0
RUBELLA	.1	.0	.7	.2	.0	.1	.1	.0	.0
SALMONELLOSIS	13.4	15.4	23.5	21.9	11.0	10.6	12.6	10.5	18.8
SHIGELLOSIS	12.6	12.2	15.2	11.3	13.4	8.7	19.6	8.8	18.2
SYPHILIS, PRIMARY/SECONDARY	28.8	18.2	5.1	5.6	47.8	35.8	12.6	37.1	4.8
TETANUS	.1	.1	.1	.0	.0	.1	.0	.1	.0
TOXIC SHOCK SYNDROME	.1	.0	.1	.0	.1	.1	.0	.2	.0
TUBERCULOSIS	14.6	11.4	8.6	16.6	20.1	10.3	12.4	9.9	24.2
TULAREMIA	.0	.0	.0	.0	.0	.0	.0	.0	.0
TYPHOID FEVER	.2	.0	.0	.4	.3	.3	.1	.0	.0
TYPHUS FEVER, ENDEMIC	.1	.0	.0	.0	.0	.1	.0	.0	1.2
VIBRIO INFECTIONS	.1	.1	.0	.0	.3	.1	.2	.0	.2

CALL

1-800-252-8239

to report infectious and occupationally-acquired diseases and conditions

Texas Department of Health
Bureau of Disease Control and Epidemiology
1100 West 49th Street
Austin, Texas