EPIDEMIOLOGY IN TEXAS 1995 ANNUAL REPORT

WALTER D. WILKERSON, JR., M.D.
CHAIR, TEXAS BOARD OF HEALTH

PATTI J. PATTERSON, M.D.
COMMISSIONER OF HEALTH

COVER:

THE FIRST CALDWELL COUNTY COURTHOUSE IN LOCKHART WAS BUILT IN 1848, AT 110 SOUTH MAIN STREET, AND THEN REPLACED IN 1858. BY 1893, THE COUNTY HAD OUTGROWN THAT BUILDING AS WELL. THE CORNERSTONE FOR THE PRESENT COURTHOUSE WAS LAID ON AUGUST 15, 1893, AND THE NEW COURTHOUSE WAS COMPLETED ON MARCH 19, 1894. OVER THE NEXT 100 YEARS, MANY RENOVATIONS WERE MADE TO KEEP PACE WITH AN EVER-GROWING COUNTY. BY 1994, HOWEVER, THE NEED FOR A MAJOR RENOVATION AND EXPANSION WAS EVIDENT. A CITIZEN'S COMMITTEE WAS FORMED THAT COORDINATED EXUBERANT AND COOPERATIVE EFFORTS AMONG COUNTY OFFICIALS AND COUNTY RESIDENTS. THE COMMITTEE RECOMMENDED THAT THE CURRENT COURTHOUSE BE RESTORED TO IT'S ORIGINAL CONDITION AND THAT OTHER BUILDINGS IN THE COUNTY BE ACQUIRED AND CONVERTED TO ACCOMMODATE THE NEED FOR ADDITIONAL SPACE. BONDS TO FUND THESE EFFORTS HAVE BEEN APPROVED, AND THE PROJECT IS CURRENTLY IN PROGRESS.

COVER AND DIVIDER PAGE ART FOR THE 1995 EPIDEMIOLOGY IN TEXAS ANNUAL REPORT IS BY GREG PATTERSON OF THE TEXAS DEPARTMENT OF HEALTH ART DEPARTMENT. THE HHS PRINTING SERVICES, CENTRAL SITE, IN AUSTIN, PRINTED THIS REPORT.

Epidemiology in Texas
1995 Annual Report

TDH
TEXAS DEPARTMENT OF HEALTH

Associateship for Disease Control and Prevention
Texas Department of Health
1100 West 49th Street
Austin, Texas 78756
epireport@epi.tdh.state.tx.us

TDH
TEXAS DEPARTMENT OF HEALTH

David R. Smith, MD
Commissioner

Carol S. Daniels
Deputy Commissioner for Programs

Roy L. Hogan
Deputy Commissioner for Administration

Diane Simpson, PhD, MD, MPH
Associate Commissioner for Disease Control and Prevention

Members of the Board of Health

Walter D. Wilkerson, Jr., MD
Chair

Mary E. Ceverha
Vice-Chair

Ruth F. Stewart, MS, RNC

Ramiro R. Casso, MD

David L. Collins, PE

Betsy Triplett-Hurt

Foreword

The last few years have been challenging for government workers. We have been asked to reinvent our jobs and right-size our workforce. Public health, like other government services, has had to reevaluate its purposes and justify its functions. Each group, national or state, which has taken on the task of determining the core functions of public health has concluded that epidemiology, the surveillance and the investigation of diseases and their risk factors, is an essential and vital function of a health department.

This need, however, may go unrecognized and unappreciated by the public we serve. Epidemiology is most often silent. An occasional outbreak or environmental concern may briefly make news but most do not. Our Epidemiology Annual Report reflects the hard work the epidemiologists around the state have accomplished in 1995.

Diane M. Simpson, PhD, MD
Associate Commissioner
Disease Control and Prevention

Contributors

Associateship for Disease Control and Prevention
Diane Simpson, PhD, MD, MPH, Associate Commissioner
Rich Ann Roche, MSCRP

Immunization Division
Robert Crider, Jr., MS, MPA, Division Director
Lisa Besselink, MHA
Gary Coil, RS, MPH
Oscar Gonzales
Brenda Howell
Kristin Hamlett, MA
Perleatha Lucky, MEd
Jan Pelosi, MPH

Bureau of Chronic Disease Prevention and Control
Philip Huang, MD, MPH, Bureau Chief

Cancer Registry Division
Nancy Weiss, PhD, MPH, Division Director
Susan E. Carozza, MSPH
Barry Wilson

Bureau of Communicable Disease Control
Michael Kelley, MD, MPH, Bureau Chief
Erik Svenkerud, MD, MPH

Infectious Disease Epidemiology and Surveillance Division
Kate Hendricks, MD, MPH&TM, Division Director
Ben J. Barnett, MD
James Perdue
Julie Rawlings, MPH
Beverly Ray, RN, CIC
James A. Schuermann
Lynne Sehulster, PhD, M(ASCP)
Jeffery Taylor, MPH
Mardi VanEgdom

Tuberculosis Elimination Division
Charles Wallace, MPH, Division Director
Julie M. Marangi
Patricia Thickstun, PhD
Ann Tyree, MS

Zoonosis Control Division
Keith Clark, DVM, PhD, Division Director
Jane Mahlow, DVM, MS
Rodney Rohde, MS
Pamela Wilson, RVT, MEd, CHES

Bureau of Epidemiology
Dennis Perrotta, PhD, CIC, Bureau Chief

Noncommunicable Disease Epidemiology and Toxicology Division
Jean Brender, RN, PhD, Division Director
Betty Atkins, MPH
Julie Borders
Sarah Doss, MPH
Richard W. Harris
Mandy Holt
Keith E. Hutchison, MA
Nancy Ingram
Amber Isaacs, MPH
Diana Salzman, MPH
Melissa Samples-Ruiz
Patricia G. Schnitzer, PhD
John Villanacci, PhD
Teresa Willis

Injury Prevention and Control Program
David Zane, MS, Program Director
Penny Finuf, MSN, RNCS
Jennifer Hunteman
Mary Jo Preece
Michael Skrabanek, MA
Gene Willard, MA

Bureau of HIV and STD Prevention
Charles Bell, MD, Bureau Chief

HIV and STD Epidemiology Division
Sharon King, MA
Elizabeth Tornich

Bureau of Laboratories
David Maserang, PhD, Bureau Chief
Susan Neill, PhD

Acknowledgments

Under the direction of a guidance team consisting of program and division directors, bureau chiefs, and the Associate Commissioner for Disease Control and Prevention -- the *Epidemiology in Texas 1995 Annual Report* was produced by a project team of representatives from each contributing program.

The guidance team and authors would like to recognize the following project team members for their excellent work

Project Team

Julie Marangi (Team Leader)
Tuberculosis Elimination Division

Debbie Hack
Bureau of Epidemiology

Kristin Hamlett, MA
Immunization Division

Susan Hammack, MEd (Editor)
Public Health Professional Education

Susan Hurst (Layout & Design)
Public Health Professional Education

Christine Leos
Bureau of Laboratories

Susan Neill, PhD
Bureau of Laboratories

Rich Ann Roche, MSCRP
Associateship for Disease Control and Prevention

Rodney Rohde
Zoonosis Control Division

Sue Shrock, MPH
HIV and STD Epidemiology Division

Elizabeth Tomich
HIV and STD Epidemiology Division

Ann Tyree, MS
Tuberculosis Elimination Division

Mardi VanEgdom
Infectious Disease Epidemiology and Surveillance Division

In addition to the project team members and authors, the following people also contributed their time and expertise:

Charlene Cain
Richard Campman
Letty Cano
Leland Carmichael
Anne Doggett
W. Paul Glezen
Larry Hartlep
Elaine Heinzke
Judy Henry
Candace Kasper
Lori Kirk
Mattie L. Larry
Paul McGaha
Chad McHugh
Pam Nickel
Sylvia Perry
William Prater
Lemuel del Rosario
Mary Rutter
Roger Sanchez
Judy Schwitzer
Glenna Teltow
Teresa Willis
Kirbi Woods
James Wright

Contents

Preface

Disease Surveillance

Public health surveillance involves systematic collection, analysis, and dissemination of data regarding adverse health conditions. This information typically includes the incidence, prevalence, and geographical location of the condition; age, sex, and race/ethnicity of the people affected; means by which the disease is transmitted; and historic trends. For many diseases, data regarding animal reservoirs and vectors also are essential. Surveillance involves investigating individual cases as well as epidemics.

During 1995 many Texas Department of Health (TDH) programs were responsible for coordinating surveillance of adverse health conditions in Texas. These programs included the following: Infectious Disease Epidemiology and Surveillance Division, Zoonosis Control Division, Noncommunicable Disease Epidemiology and Toxicology Division, Injury Prevention and Control Program, Tuberculosis Elimination Division, Immunization Division, Bureau of HIV and STD Prevention, Bureau of Laboratories, and Bureau of Chronic Disease Prevention and Control.

The value of epidemiologic surveillance cannot be overestimated. In public health, surveillance data are used to monitor disease trends; detect, respond to, and study new disease threats, outbreaks, or epidemics; identify risk factors; and plan, implement, and assess intervention and prevention services. Prompt feedback of current, accurate, and complete data is essential so that health professionals can provide the highest quality of medical care and policymakers can plan, manage, fund, and justify disease control activities and research.

Reporting

Texas law requires that certain conditions be reported. The *Reportable Conditions in Texas* form (TDH Stock No. 6-101a) lists all currently reportable conditions in Texas, guidelines for reporting, and telephone numbers where professional staff may be reached for consultation (Appendix **A).** Reporting forms may be obtained by calling the various divisions to which reports are made. TDH has a 24-hour, toll-free telephone reporting system. Health professionals who call (800) 705-8868 during business hours reach the nearest health department. After hours and on weekends, they reach TDH staff in Austin.

Most case reports must include the patient's name, date of birth, sex, race/ethnicity, city of residence, date of onset, physician's name, and method of diagnosis. The exceptions are as follows. Chickenpox is reported by number of cases. HIV infections are reported by name for children under 13 years of age and by the last four digits of the social security number for adults and adolescents. HIV reports for all ages must also include the patient's age and date of birth; sex; race/ethnicity; city, county, and zip code of residence; date of test; and physician's name, clinic address, and telephone number.

Surveillance data also are obtained from laboratory reports, case investigation forms, and TDH Bureau of Vital Statistics death certificates. Social and demographic information is collected to determine patterns of disease in the population, identify case contacts, and target control measures.

Explanatory Notes

All cases that occurred in Texas during 1995, whether to state residents or to persons temporarily in the state, are included in this report. Reportable conditions diagnosed in residents of other states in the US, while they are visiting Texas, are reported to the health authorities of the individual's home state. These cases are not included in this report. Reports regarding Texas residents who became ill while visiting other states are included in this report. *Reportable Condition in Texas* (6-101a: Appendix A) is the most current form as of publication of this report; it includes two changes that were not in effect when the data for this report were collected. Before August 1,1996, cryptosporidium infections and ehrlichiosis were not reportable. After this date, reporting of invasive *Haemophilus influenzae* infections was limited to H. *influenza* type b infections only. Mortality data were obtained from the TDH Bureau of Vital Statistics or from individual program records.

The information in this report is subject to limitations which affect many data collection systems. Under reporting is a ubiquitous problem, but its extent differs among diseases. Reported rates of disease are affected by the estimation inherent in population projections. Care should be used in interpreting rates of annual disease incidence for small areas or for infrequently occurring diseases. Unless other information is available about area health conditions or temporal patterns of disease, such rates should not be used as indicators of the usual incidence of a disease.

TDH uses the following race/ethnicity designations*. For reporting purposes, when an individual is of mixed racial or ethnic origin, the category that most closely reflects his or her recognition in the community is used. In TDH reports, the term used to obtain the data is the one used to describe those data.

White: Persons having origins in any of the original people 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.

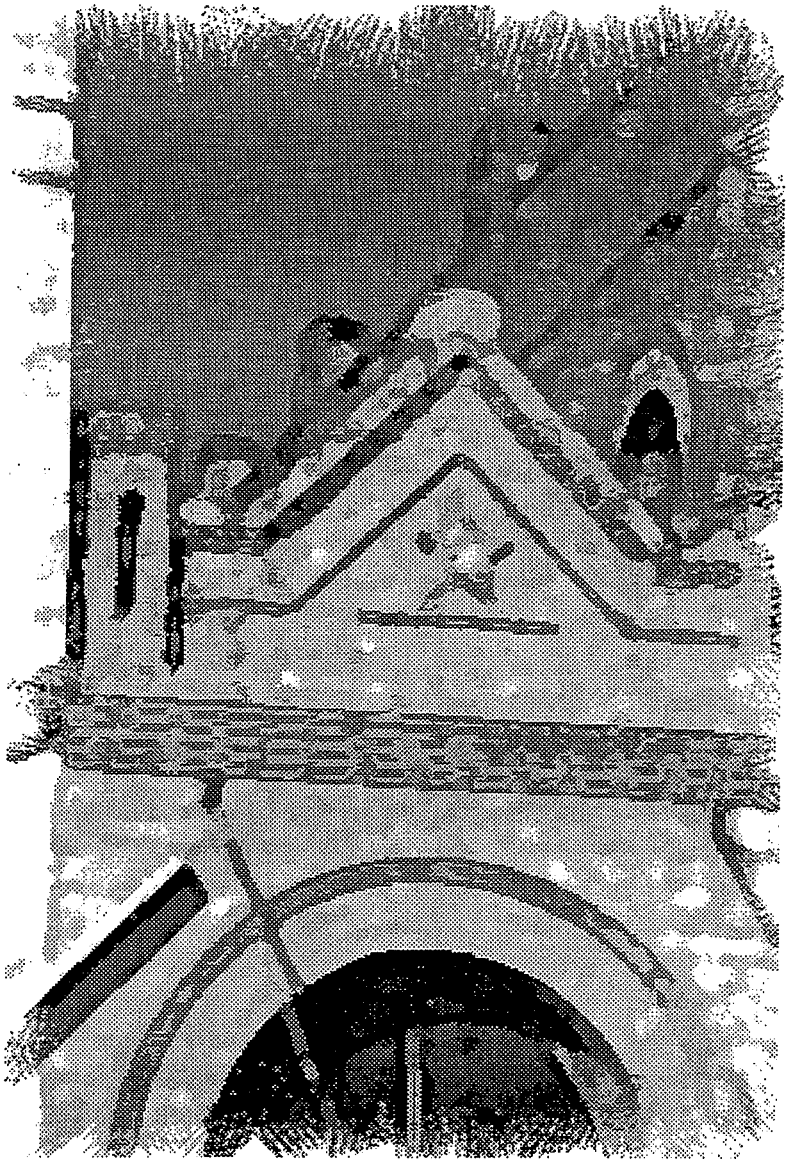
Black/African American: Persons having origins in any of the black racial groups of Africa. (The standard term used in epidemiologic reports is "black." "African American" is often used in political or cultural contexts.)

Asian or Pacific Islander: Persons having origins in any of the original peoples of the 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 maintain cultural identification through tribal affiliation or community recognition.

* Based on US Department of Commerce designations published in the CDC Manual of Procedures for National Morbidity and Public Health Activities

REPORTS



Active Surveillance of Vaccine-Preventable Diseases

In 1995, the Immunization Division initiated an active surveillance system to monitor vaccine-preventable disease occurrence. To prevent duplication of surveillance activities, regional and local heath departments were queried about any existing active surveillance systems. Austin Health and Human Services/Travis County Health Department, Dallas County Health Department, Houston Health and Human Services, and the San Antonio Metropolitan Health District either had existing active surveillance systems or requested that local agencies and physicians in their areas not be contacted. This active surveillance system was designed to enhance and assist, rather than to replace, current surveillance activities. Prior to the implementation of the active surveillance system, surveillance activities relied solely upon hospitals, laboratories, health providers, day-care centers, and schools reporting vaccine-preventable disease cases to their local health departments or to the Texas Department of Health.

The Immunization Division enlisted nearly 500 active surveillance sentinels from Texas. The selected sites included large private hospitals, all public hospitals, school districts with more than 5,000 students, day-care centers, major private clinics, and universities with more than 10,000 students. The sentinels were rotated every **3** months, so that 125 sites were routinely contacted every 2 weeks for a calendar quarter and asked about cases of measles, mumps, rubella, pertussis, and varicella diagnosed in the facility. If a case was identified through these calls, it was determined if the case had previously been reported. If it had not, the local health department was immediately contacted, and a case investigation was initiated at that time.

Over the course of 1995, the active surveillance project collected information on 7,148 cases of varicella from participating sentinels. Six suspected measles cases and six suspected rubella cases were detected through this system, as were 17 suspected cases of pertussis and 24 suspected cases of mumps.

Over the year, approximately 2,800 telephone calls were placed to sentinels to collect this information. This effort clearly demonstrates the labor-intensive nature of active surveillance systems. However, these suspected cases may not have otherwise been reported to local or regional health departments. As a result, control measures may not have been initiated in a timely manner, and the potential for further disease transmission may have been great. In future years, the Immunization Division hopes to expand the active surveillance system's ability to identify unreported cases of vaccine-preventable diseases by enlisting more sentinels.

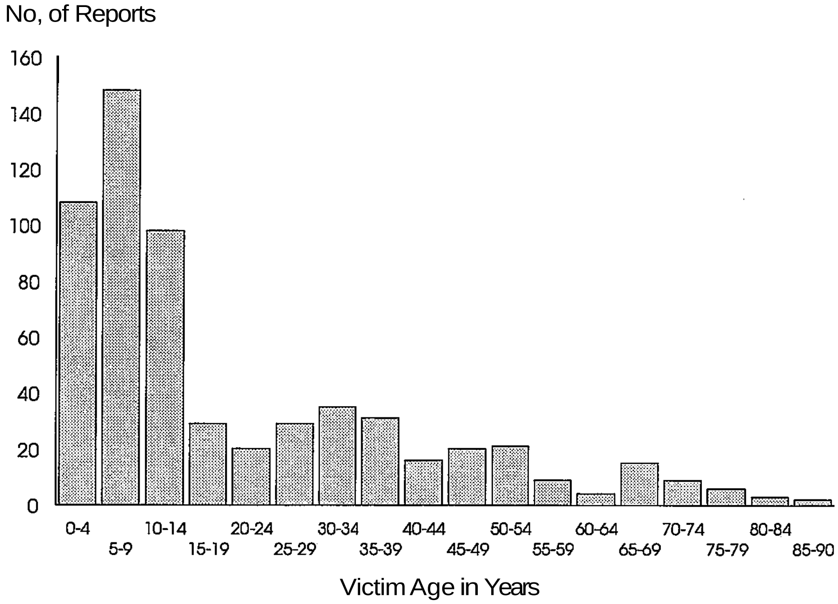
Immunization Division (800) 252-9152

Animal Bites

A total of 621 reports of severe animal bites and attacks[1] were voluntarily submitted by local health departments, animal control agencies, and emergency health care providers to the Zoonosis Control Division of the Texas Department of Health in 1995. Reports were submitted from 72 of Texas' 254 counties.

The data collected in 1995 did not differ significantly from that of previous years. No fatalities were reported in 1995.

Figure 1. Victim's Age in Severe Animal Attacks



Victim characteristics

Dog bites represent a significant source of morbidity and mortality in the pediatric age group. Children under the age of 11 were almost 4 times more likely to sustain a severe bite than were adolescents and adults (Figure 1). Particularly noteworthy is that injuries to the head were sustained by 77 (57%) bite victims under 6 years of age but by only 32 (10%) victims over 10 years of age. The anatomic location of dog bites in young children can largely be explained by their diminutive stature, which places the head in close proximity to the dog's mouth. Injuries to the head and neck are extremely serious because they can result in disfiguring wounds as well as life-threatening injuries involving hemorrhage and cranial trauma.

Table 1. Frequency of Dog Breeds Involved in Severe Attacks on Humans

Breed	No.	%
Chow chow	67	14
Chow cross	39	8
Pit bull	32	6
German shepherd	26	5
Heeler	24	5
Mixed	24	5
Rottweiler	23	5
German shepherd cross	20	4

Animal characteristics

Dogs were involved in 534 (86%) of the incidents. Other species included bat (1), cat (66), fox (1), gopher (1), guinea pig (1), hamster (2), horse (2), opossum (1), prairie dog (2), rabbit (2), raccoon (1), rodent (2), rooster (1), snake (1), squirrel (1), and wolf-dog hybrid (2). Slightly over half (55%) the biting dogs and cats were vaccinated against rabies.

The tendency of a dog to bite is a product of many factors including genetic predisposition to aggressiveness, maltreatment, late or inadequate socialization to people, quality of care, and behavior of the victim. Eight breeds constituted over half

[1] "Severe bite" is defined as one in which the animal repeatedly bites or vigorously shakes its victim, and the victim or a person intervening has extreme difficulty terminating the attack. "Severe attack" is defined as a puncture or laceration made by an animal's teeth which breaks the skin, resulting in a degree of trauma which would cause most prudent and reasonable people to seek medical care for treatment of the wound, without consideration of rabies prevention alone. For purposes of this report, the terms "severe bite" and "severe attack" will be used interchangeably.

(52%) of the dogs involved in severe attacks (Table 1). However, since breed prevalence figures are not available, it is unknown whether these figures represent breed predisposition to aggressiveness or simply the popularity of these breeds. Small breeds of dogs and cats were infrequently reported since they are seldom capable of inflicting severe wounds.

Almost one-fourth (23%) of the attacks involved extenuating circumstances which provoked the dog to attack. Provocation included estrus, hunger/eating, puppies/kittens, jealousy, abusive treatment, guarding, injury, startling, dog fight, teasing, and rough play (pulling on body part).

Zoonosis Control Division (512) 458-7255

Brucellosis: Congenital Transmission in Galveston

In March 1995 blood cultures drawn from an infant in the neonatal intensive care unit at a hospital in Galveston were positive for *Brucella melitensis.* The infant's mother had also had blood cultures positive for *Brucella melitensis* in January 1995. Congenital transmission of *Brucella* is extremely uncommon; indeed, this is the first reported occurrence of congenital brucellosis in the United States.

The mother, a 17-year-old citizen of Mexico, became pregnant in August 1994. She moved to Port Arthur (Jefferson County) in December. When she went for a routine prenatal check to the UTMB clinic in Port Arthur on January 11, she was doing well. However, on January 16 she presented to the clinic complaining of postcoital bleeding. She was transferred to UTMB-Galveston for observation, where initial examination revealed a closed cervix and normal fetal heart tones. The fetus was at 21 weeks gestational age by ultrasound examination. The next morning, the mother began to have contractions and was given a tocolytic agent. On the morning of January 19 she had a low-grade fever. Blood cultures were drawn to rule out chorioamnionitis and antibiotic treatment was initiated. However, she continued to have contractions and delivered a 650 gram baby girl later that morning by spontaneous vaginal delivery. The blood cultures were negative at 48 hours, and she was discharged the morning of January 22.

That night, however, the mother's blood cultures grew gram-negative coccobacilli, which were identified as *Brucella* sp. on January 25. Later at the Texas Department of Health laboratory, it was shown to be *Brucella melitensis.*

The infant's blood cultures at birth were negative. Because her birth was extremely premature, she was intubated and placed on mechanical ventilation soon after birth. Despite multiple medical problems, she slowly improved during the month of February. However, on March 4 she became lethargic and had an episode of apnea. Blood cultures were drawn for presumed sepsis. *Brucella* sp. was identified from the cultures on March 14 and later identified as *Brucella melitensis* at the TDH Laboratory. She was treated with gentamicin and trimethoprim-sulfamethoxazole and recovered. As of September 7 she weighed 5,100 grams and showed normal development.

The mother grew up on a small farm in central Mexico. While on the farm, she often drank unpasteurized cow milk, but she did not drink goat milk or eat goat milk cheese. When she became pregnant in August 1994, she moved to a small village near the farm to be with relatives. The relatives often bought unpasteurized goat cheese from local vendors and the mother ate it occasionally. After moving to Port Arthur in December, she no longer ate unpasteurized products.

In recent years the epidemiology of brucellosis in Texas has shifted; most cases are now associated with consumption of unpasteurized goat cheese. This is likely the mechanism through which the mother acquired brucellosis. While it is unproven that infection with *Brucella* induces abortion in humans as it does in cattle, any gram negative bacteremia would be expected to increase the risk of premature birth. The mother was bacteremic during delivery of the infant and very likely passed the infection to her child during birth. The infant became septic 6 weeks after birth, which is within the 1 to 2 month incubation period of brucellosis.

This episode may be a sentinel event. As intensive care becomes more and more sophisticated, and younger and younger premature infants are able to survive (who might otherwise have been classified as a "spontaneous abortion"), brucellosis may emerge as an important etiology of prematurity in humans.

*Infectious Disease Epidemiology and Surveillance Division (512)*458-7676

Cancer Cluster Investigations

Introduction

A cancer cluster is defined as a greater than expected number of cancers occurring among people who live or work in the same area and who develop the disease within a short time of each other. One of the more difficult tasks of the Texas Department of Health (TDH) is the challenge of responding to anecdotal observations of potential space-time "clustering" of cancer among Texas residents. The TDH Texas Cancer Registry (TCR) and the Health Studies Program are primarily responsible for investigating perceived excesses of cancer. These programs must deal with issues inherent in both the natural history of cancer and the available statistical methodology which complicate the investigation of any report of a possible excess of cancer.

Cancer is a very common disease, much more common than most people realize. Approximately **1** of every **3** persons alive today will develop some type of cancer in their lifetimes. Furthermore, cancer is not one disease, but many different diseases, each with a different set of causal factors. Current research indicates that the occurrence of any given cancer is dependent on the interaction of many separate causal factors such as age, race, sex, inherited susceptibility, geographic area, occupational and environmental exposures, and lifestyle. It is unlikely that any one factor is both necessary and sufficient to cause a cancer. Even for tobacco, exposure does not always result in lung cancer. In addition to the difficulty of establishing a causal relationship for any given exposure, the latency period between time of exposure and development of disease must also be considered. As cancer can take 20 to 40 years to develop to a stage where it is clinically recognizable, exposures that occurred within the last 5 or 10 years are unlikely to be related to the current incidence of cancer in a community.

Cancer Cluster Investigation Protocol

To address the complexities and limitations discussed above, the Texas Cancer Registry developed a four-stage protocol for the investigation of potential cancer clusters, based on recommendations published by the Centers for Disease Control and Prevention. To assess a cluster, this protocol relies on measuring statistical significance, determining biological plausibility, and identifying possible pathways of exposure. It is distinguished from other protocols by the use of incidence data derived from the Registry rather than the informant. Pertinent data regarding the potential cluster are obtained during the initial contact with the informant, including number and types of cancer cases, time period, geographic area of concern and suspected exposure(s). The initial contact is also used as an educational opportunity to provide the caller with basic information on cancer. For the investigation to proceed beyond this stage, the initial data must indicate that

- The cluster consists predominantly of the same cancer site or multiple sites that may be related to a common exposure.

and

- There is an adequate latency period as measured by the length of time cases have resided in the area.

OR

- There is inadequate information to judge either of the above.

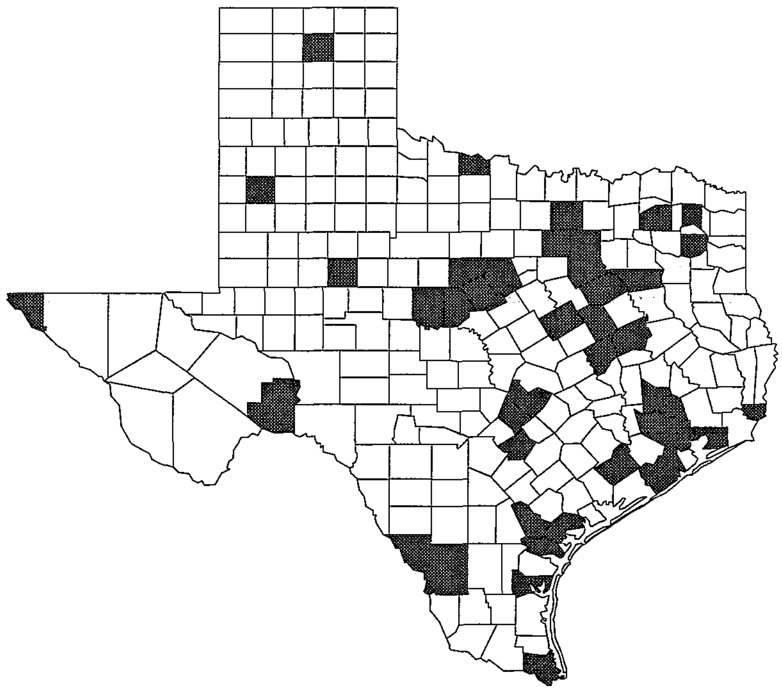
If the initial contact permits satisfactory closure, then a summary report reiterating the educational information is sent to the informant.

The second stage of the investigation consists of multiple, concurrent steps: a preliminary evaluation to provide an estimate of the statistical likelihood that an important excess has occurred, an exposure evaluation to identify a biologically plausible environmental exposure(s), and an assessment of possible pathways of exposure. If specific environmental concerns were raised during the initial contact, the Health Studies Program is notified and assists in the investigation by obtaining information regarding possible environmental exposures. For example, if the caller is concerned about contaminated drinking water, the Water Quality Division of the Texas Natural Resource Conservation Commission is contacted and copies of recent water analyses are requested. If the preliminary evaluation suggests no excess or does not meet specific criteria, a written report is sent to the informant indicating the findings, including any environmental exposure information, and advising that no further evaluation is warranted. However, if an excess is indicated and the epidemiologic and biological plausibility is compelling, the next stage of the investigation is a feasibility study.

The feasibility study is designed to determine the appropriateness of performing a full scale epidemiologic study to investigate the relationship between the health event and a putative exposure(s). This evaluation begins with a written protocol that outlines the costs and provides information on data collection, proposed methodology, and the plan for data analysis. If the feasibility study suggests that little will be gained from an etiologic investigation, a written report is sent to the informant, as well as other interested parties, summarizing the results of this process; regardless of biologic merit, however, the public or media may continue to demand further investigation. Community relations, media contacts, and advisory committee interaction are critical for an appropriate public health response.

If the feasibility study suggests that an etiologic investigation is warranted, an epidemiologic study will be recommended. The purpose of the study is to perform an etiologic investigation of a potential disease-exposure relationship and pursue epidemiologic and public health issues - not necessarily to investigate a specific cluster. The results from this study are expected to contribute to epidemiologic and public health knowledge.

Figure 1. Cancer Cluster Investigations by County



1995 Cluster Investigation Summary

In 1995, 53 cancer cluster investigations, covering various geographical areas of the state, were completed by TCR and the Health Studies Program (see Figure 1). The majority of the investigations (72%) were requested by private citizens while 11% were requested by health care officials, 8% by other government agencies, and 9% from miscellaneous sources. Of the investigations conducted, *26%* were at the county

Table 1. Cancer Sites by Number of Investigations

Cancer Site	No. of Investigations	Cancer Site	No, of Investigations
Leukemia	32	Colon	22
Brain	26	Liver	20
Lung	24	Prostate	14
Pancreas	24	All other	104
Breast	23		

level and 68% were at the city (or zip code) level. Six percent of the investigations were a combination of city and county.

Both cancer incidence and mortality data are maintained in the TCR database. Mortality data are used for those areas of the state where incidence reporting is determined to be incomplete. In 1995, 36% of the investigations analyzed incidence data, 55% utilized mortality data, and 9% analyzed both types of data. TCR anticipates eventually having statewide incidence data available beginning with cases diagnosed from 1992 forward.

Of the 53 cancer cluster investigations, 39 (74%) assessed possible excesses in two or more cancer sites. Leukemia was evaluated in 32 of the total investigations, making it the single most frequently assessed cancer site (Table 1). Brain cancer was the next most common cancer site (26), followed by lung and pancreas (24 each). Overall, approximately 289 separate analyses of specific cancer site and gender combinations were required to assess the 53 reports of potential clusters. Seventeen (32%) of the cluster investigations resulted in statistically significant findings (either a deficit or an excess of cancer). None of the investigations proceeded beyond the second stage of the protocol (preliminary statistical and exposure evaluations).

The number of inquiries from concerned citizens, reporters, health professionals, legislators, and activist groups regarding a concern about a perceived excess of cancer in their community or among their clients has been steadily increasing over the past 10 years. The fear of cancer in combination with a public concern over environmental exposures to carcinogenic agents may be one reason why cancer cluster investigations appear to be on the rise. In Texas the average number of cancer cluster investigations per year prior to 1990 was 19. Since 1990 this figure has risen to 44. Although there is little potential for identifying specific causal factors or developing new etiologic insights through a cluster investigation, responding to reported clusters is a legitimate and necessary public health activity. A successful conclusion to a cancer cluster investigation does not always depend on finding a "cause." It usually depends on communicating the results of the investigation in a responsible manner, which expresses official interest and legitimacy.

Cancer Registy Division (512) 502-0680

Dengue Fever

On August 25,1995, the Texas Department of Health (TDH) was notified of an ongoing dengue fever outbreak in Reynosa, Tamaulipas, Mexico, approximately 10 miles from McAllen. The proximity of the Reynosa outbreak increased the likelihood of both imported and autochthonous cases occurring in Texas.

The day TDH became aware of the Reynosa outbreak, a dengue alert memorandum was faxed to all local health departments, infection control practitioners, and infectious disease practitioners in South Texas. All of the large hospital emergency rooms were telephoned that evening. The following week, a press release was issued advising the public about the threat of dengue and how to avoid mosquito exposure. In addition thousands of Spanish and English posters and pamphlets were distributed. Information packets were mailed to 13,000 primary care and emergency room physicians throughout the state.

In 1995 TDH reported 29 cases of dengue from the following counties: Hidalgo 9, Harris 5, Cameron 4, Dallas 4, Fort Bend 2, and Bell, Collin, Hays, Tarrant, and Waller 1 each. Dengue virus was isolated from 3 patients. The first isolate, from a patient residing in Hidalgo County, was dengue-2; the second, from a patient in Cameron County, was dengue-4; and the third, from a Dallas resident, was dengue-3. Neither the patient with dengue-2 nor the patient with dengue3 had a travel history.

Four cases from Hidalgo County and 3 from Cameron County were locally acquired; the remaining 22 patients had travel histories. Twelve had been to Mexico. The others had been to the Caribbean (4), El Salvador (2), Honduras (2), or Guatemala (1). The patient with the dengue-3 isolate drove through Mexico and Guatemala to El Salvador.

Two patients had onset of illness in March, 2 in July, 5 in August, 9 in September, 7 in October, 2 in November, and 2 in December. Symptoms included fever (29); arthralgias/bone pain (26); headache (24); chills (21); myalgias (18); anorexia (18); severe malaise (17); rash (16); lumbosacral pain (12), nausea/vomiting (12), dysgeusia (11), retro-orbital pain (9); cutaneous hypersensitivity/"skin felt strange" (7); respiratory symptoms (7); petechiae, purpura, or epistaxis (3); and lymphadenopathy (4).

Infectious Disease Epidemiology and Surveillance
(512) 458-7228

Environmental and Occupational Epidemiology Program

The Texas Occupational Disease Reporting Act, passed by the 69th Legislature in 1985, requires physicians and laboratory directors to report cases of asbestosis, silicosis, and elevated blood lead levels in adults. This act also gave the Texas Board of Health the authority to add other preventable occupational diseases to the list. Later in 1985, the Board added acute occupational pesticide poisoning to the list of reportable conditions in Texas. The National Institute for Occupational Safety and Health (NIOSH) of the Centers for Disease Control and Prevention (CDC) has provided funding for some occupational disease surveillance activities in Texas since 1987. This funding is provided through a Sentinel Event Notification System for Occupational Risks (SENSOR) Cooperative Agreement.

Funded in part by the SENSOR Cooperative Agreement, the Environmental and Occupational Epidemiology Program (EOEP) of the Texas Department of Health (TDH) conducts active surveillance throughout the state of reportable occupational diseases. The following reports describe the epidemiology of these diseases in Texas in 1995, as well as investigations into specific exposure events.

Noncommunicable Disease Epidemiology and Toxicology Division (512) 458-7269

Acute Occupational Pesticide Poisoning

The Environmental and Occupational Epidemiology Program (EOEP) of the Texas Department of Health (TDH) conducts active surveillance of acute occupational pesticide poisoning throughout the state. This active surveillance uses a sentinel provider system consisting of hospitals, clinics, and individual physicians who consent to be contacted regularly by EOEP staff. Reports are solicited of pesticide-related illnesses from these sentinels. Active surveillance has expanded each year since its inception in 1990: in 1995, 55 health clinics, 55 hospitals, and 25 physicians participated as sentinel providers. EOEP also reviews death certificate data quarterly. In addition, EOEP receives reports of pesticide-related illness from

- Texas Department of Agriculture (TDA)
- Texas Poison Center Network
- Structural Pest Control Board
- Other state agencies
- Health care providers throughout the state

In 1995, EOEP received reports of 43 incidents of acute occupational pesticide-related illnesses involving 53 workers. Persons with reported pesticide-related illness ranged in age from 18 to 73 years. Thirty-three (62%) were white, and 1 (2%) was African American. For 19 (36%) workers the race was unknown. Twenty-one (40%) were of Hispanic descent. Forty-four (83%) of the workers were male, and 9 (17%) were female. Agricultural settings accounted for 40 (75%) of the reported illnesses. The distribution of ill workers by occupation is presented in Table 1. The distribution of reports by reporting source is shown in Figure 1.

Table 1. Acute Occupational Pesticide Poisoning Reports by Occupation at the Time of Exposure

No. Workers	(%)	Occupation
14	(26.42)	Farm worker
9	(16.98)	Farmer
5	(9.43)	Clerk (office or retail)
5	(9.43)	Landscape/nursery/greenhouse worker
3	(5.66)	Oil well service worker
3	(5.66)	Rancher/ranch hand
3	(5.66)	Structural pest control applicator
2	(3.77)	Aerial applicator
2	(3.77)	Nurse
2	(3.77)	Truck driver
1	(1.89)	Border patrol agent
1	(1.89)	Cotton gin foreman
1	(1.89)	Flagger
1	(1.89)	Teacher
1	(1.89)	Warehouse unloader

n=53

Field investigations

Beginning in May 1995, EOEP received additional funding from NIOSH to conduct field investigations of selected occupational pesticide exposures and illnesses. The objectives of the field investigation initiative are to

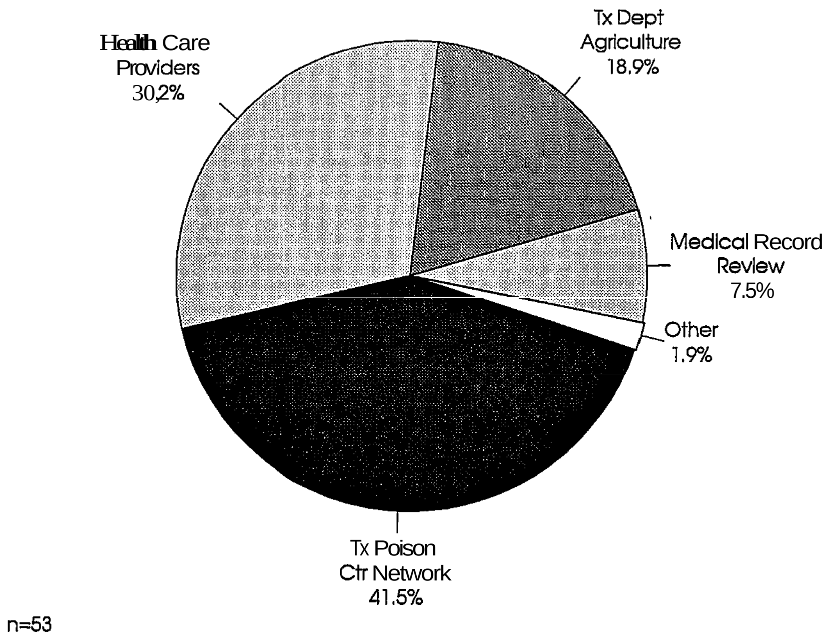
- determine if field investigations will yield information useful for prevention
- better understand under what circumstances field follow-up is appropriate
- develop protocols of potential use to other surveillance systems

The goals of the field investigation initiative are to

- decrease the delay between the time of exposure and illness and the report to TDH
- outline priorities for field investigations
- develop, test, and revise field investigation protocols

By working closely with the **TDA** and the Texas Poison Center Network, the lag time for receiving reports of acute occupational pesticide poisonings has decreased dramatically. Historically, the EOEP might not receive reports of pesticide-related illnesses from reporting physicians or hospitals for several weeks to several months after the exposure occurred. Now, reports are received from **TDA** and from the Texas Poison Center Network within several days, and sometimes within hours of the actual exposure. This decrease in lag time is essential for the success of a field investigation program.

Figure 1. Acute Occupational Pesticide-Related Illnesses by Reporting Source



EOEP and NIOSH identified priorities for field investigations. Those priorities are for pesticide exposure and subsequent illness associated with the following situations:

- hospitalization or death
- exposure of more than one worker
- chlorpyrifos or diazinon exposure
- use according to label instructions
- exposures of an ongoing nature

Investigations are conducted when a timely report of a high priority incident is received. **A** final report is prepared when the investigation is concluded. Summaries of three investigations conducted in 1995 follow.

Investigation 1. EOEP received reports of 6 cases in which irrigation workers were exposed during 1 week to pesticides from aerial applications. The 6 Hispanic men, aged 18 to 22 years (average age, 20 years), were initially exposed when a crop duster sprayed the watermelon field in which they were working. The workers were unable to avoid exposure to the pesticide because they were not instructed to leave the field until after the pesticide application had started. It is likely the workers' exposure occurred either via direct spray, aerial drift, direct contact with the sprayed plants while exiting the field, or some combination of these three mechanisms. The men reported several additional exposure incidents, all involving aerial applications, that took place during the week.

All six men were hired either the day before or the day of the initial pesticide exposure. None of the workers were wearing any protective clothing or equipment while working in the fields. In fact, all were wearing short sleeve shirts, 4 were wearing shorts, **and** 4 were barefoot. Except for irrigation water, workers had no access to running water or soap and toilet facilities in the watermelon fields.

All six workers sought care at the local hospital emergency department (ED), within 2 to 6 days after the initial incident, for symptoms attributed to their pesticide exposure. Symptoms reported most frequently were skin rash, itching, and weakness. Each worker experienced at least one of several symptoms (itching skin, irritated eyes, nausea, abdominal cramping). Other than a laceration and a rash on one worker, the medical records noted no physical distress. Several records noted that the symptoms had resolved before ED evaluation.

The chemicals involved were Fusilade DX® (a selective herbicide), Maneb 75 DF® (a fungicide), and Admire 2F8 (an insecticide). Little data are available on the health effects of acute exposure to Fusilade DX®, but it is a known eye, skin, and respiratory irritant. Maneb® also may cause irritation of the skin, respiratory tract, and eyes. Systemic poisoning by these agents is very rare. Admire 2F8 is a new insecticide, and little is known about the acute effects of exposure in humans. Animal studies show Admire® to be a mild eye irritant but not a dermal irritant or sensitizer. These compounds are not inhibitors of cholinesterase, and no laboratory tests are available to identify these pesticides or their breakdown products in body fluids.

Exposure to Maneb® is consistent with several workers' reports that they noticed a green/yellow powder on themselves and their clothing. It also is consistent with the symptoms of skin and eye irritation reported by the workers. Maneb® also may cause nausea, vomiting, and diarrhea--symptoms that several workers reported.

The US Environmental Protection Agency (EPA) developed the Worker Protection Standard (WPS), which requires training and informing agricultural workers on the safe use of pesticides or potential health effects of pesticide exposure. Besides providing information about the law, WPS training describes ways workers might protect themselves from pesticide exposures. The WPS also states that supplies for routine washing (water, soap, and towels) must be available within one-quarter mile of the workers. None of the workers had received training. Had the workers received WPS training, the effects of the pesticide exposures may have been attenuated. Efforts to train all agricultural workers, particularly intermittent or migrant farm workers, are essential to preventing similar pesticide exposure incidents in the future.

Investigation *2*. During 1 week, EOEP received 5 reports involving 10 individuals potentially exposed to Furadan® (carbamate insecticide). Furadan® is a highly toxic, restricted-use pesticide. The EPA issued Texas a special exemption to use Furadan® on cotton. In addition, at the time of these reported exposures, Furadan® was under review by the EPA for re-registration. A field investigation was conducted to document potential illness related to these reported exposures.

Furadan® is a carbamate insecticide that causes rapidly reversible direct cholinesterase inhibition. Early symptoms of carbamate poisoning include malaise, muscle weakness, dizziness, and sweating. Headache, salivation, nausea, vomiting, abdominal pain, and diarrhea are also often reported. Miosis, incoordination, and slurred speech are reported and dyspnea, bronchospasm, and chest tightness may progress to pulmonary edema. Blurred vision and muscle twitching may occur. Death can result from severe bronchoconstriction or respiratory paralysis. Below is a brief description of the 5 exposure incidents.

Incident 1. Two farmers were working in the dairy barn when they heard a low flying plane. One farmer went outside and noticed an aerial application occurring in a cotton field next to his farm. The farmer tried to attract the attention of the applicator, so he would not continue to spray so close to his land and livestock. The second farmer came out, and both men felt the spray residual as the applicator made another pass. This time the applicator saw the men and stopped the application.

Both farmers denied any specific health complaints or symptoms. Vegetation samples from the dairy farm and the farmers' shirts detected Furadan residue.

Incident 2. Two farm workers were leaving a field in a truck when an aerial applicator spraying a nearby field flew overhead. Although the windows of the vehicle were closed, they thought they might have been exposed to the pesticide spray from the airplane. The next day, these two farm workers were working in a cotton field from a four-wheeler. Aerial spraying was taking place in an adjacent field, approximately one-quarter mile away, and one worker felt droplets as the airplane turned over a nearby field.

Both workers became ill that evening and sought medical care at a local health clinic several times over the next five days. Symptoms included nausea, abdominal cramps, diarrhea, chest pain, and blurred vision. Each worker received an atropine injection and a RBC (red blood cell) cholinesterase test, the results of which were within the laboratory reference (normal) range. No baseline cholinesterase levels were available for comparison.

The aerial applicators had been spraying Furadan®. The TDA inspector sampled their vehicle, the four-wheeler, and the target cotton field for evidence of Furadan®. Only the samples from the target cotton fields had Furadan® residue.

Incident **3.** A farmer was cultivating his field in a tractor with no side doors or windows, when an aerial application began in an adjacent field. As the airplane passed overhead, the farmer saw the spray land on the windshield of his tractor and felt mist on his face. Almost immediately, the farmer experienced shortness of breath, headache, epigastric pain, nausea, and weakness. He went immediately to the ED at the local hospital several miles away where he presented with the above symptoms. The medical record noted this farmer had preexisting lung disease (asthma) and a heart condition. After examination by a physician and an electrocardiogram, he was released to home with a diagnosis of chemical exposure.

The aerial applicator had been spraying Furadan®. Samples from the windshield of the tractor and the target cotton field were positive for Furadan® residue.

Incident 4. Several hours after eating fruit from a tree in her yard, a woman experienced severe abdominal cramps, nausea, and diarrhea. She sought medical care the following day; her symptoms resolved completely within 48 hours.

Furadan® had been applied aerially on the cotton field across the street from this woman's house earlier that day. When questioned later, she recalled aerial spraying in the field and the pilot turning over her house. Samples taken from the fruit remaining on the tree and the target cotton field both came back positive for Furadan®.

Incident 5. Four oil well workers were repairing an oil well in a field of milo. This milo field was contiguous with a cotton field. After starting their work, the workers noticed an aerial application occurring on the cotton field nearby. They got into their truck and left the field, park-ed approximately one-half mile away, and waited for the application to finish. Upon their return, they saw a sign at the edge of the field, stating that pesticides had been applied and that entering the field for 48 hours was not safe. The men reported they could smell the pesticide. Concerned for their safety, the men returned to the oil well only to turn off their equipment and then left. All four workers stated that they were not directly exposed by the spray or spray drift.

Two of the four workers reported that the following symptoms began when they returned to the oil well to turn off the equipment and lasted for several hours: watery, burning eyes; an irritated throat; blurred vision; and muscle aches. Three of the four men were tested for cholinesterase levels; all cholinesterase results were within the normal range. TDA took samples from the oil well, the buffer zone around the oil well, and the workers' clothing. All samples were negative for Furadan® residue.

These four incidents provide the full range of possibilities regarding exposure and potential health effects. Sampling results documented exposure to Furadan® in three of the incidents (1, 3, and 4). Observed health effects ranged from no symptoms after dermal and inhalation contact to significant gastrointestinal distress following accidental ingestion. Neither sampling results nor witness reports documented exposure to Furadan® in two incidents (2 and 5), yet workers in one incident were ill enough to seek medical care several times.

All three incidents with documented exposures occurred during aerial application of Furadan®. It is difficult to quantify for each particular pesticide the exposure level that would cause a specific illness. However, reasonable preventive action could have greatly reduced pesticide exposure in the incidents described above and thereby probably prevented the associated adverse health conditions. EOEP recommended that greater care be taken to ensure that people are not present in areas where aerial application of any pesticide is occurring and that sufficient measures be implemented after aerial pesticide application to prevent people from entering sprayed areas until the time period of exposure risk is passed.

Investigation 3. EOEP received a report of a worker seen at an ED with symptoms of acute pesticide poisoning. His symptoms included headache, nausea, vomiting, diarrhea, cough, dizziness, sweating, fatigue, abdominal pain, and excessive salivation. The worker became ill after applying an organophosphate fumigant the previous evening. Although the worker was a licensed pesticide applicator and had been a greenhouse employee for two years, this was the first time he had used this chemical. Despite feeling ill and smelling the chemical early in the application process, he and three other applicators completed the fumigation.

WPS regulations specify the type of personal protective equipment that must be worn during application. During the application, the worker wore all the personal protective equipment required by WPS regulations: full-body suit, boots, gloves, and a full-face respirator with pesticide and dust filters. Qualitative respirator-fit tests before the application did not detect improper respirator fit or leaking. Since he smelled the chemical during the application, and his symptoms were highly characteristic of organophosphate poisoning, it is likely that exposure to the fumigant caused his illness.

A field investigation during the next application of this organophosphate fumigant, included interviewing the pesticide applicators, inspecting their personal protective equipment, observing the preparation for and subsequent pesticide application, and evaluating the workers' adherence to label instructions and safety procedures.

In this situation, workers had used equipment meeting the label criteria but still smelled the chemical and became sick. Because the respiratory protection required by the label apparently was inadequate, EOEP recommended that federal and state regulatory agencies evaluate the respirator requirements listed on these fumigant labels and change the label, if necessary, to ensure adequate protection for workers.

Because the poison center reported the possible pesticide illness within 24 hours of the worker's ED visit, EOEP was able to schedule a field investigation to coincide with the second scheduled application. Observing the actual application procedure allowed EOEP to provide more useful recommendations.

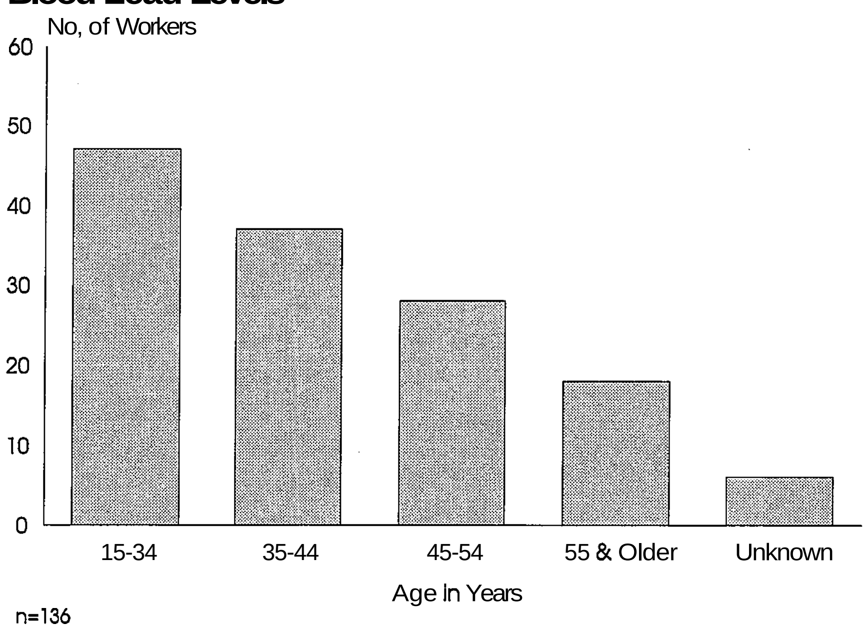
Noncommunicable Disease Epidemiology and Toxicology Division (512) 458-7269

Adult Elevated Blood Lead Levels

The Texas Administrative Code §99.1 sets the level for reporting of elevated blood lead levels at 40 micrograms of lead per deciliter of blood in persons 15 years of age or older. In 1995, EOEP received 483 elevated blood lead test results for 136 workers. Because the Occupational Safety and Health Administration mandates blood lead testing for workers exposed to lead, EOEP often receives more than one test result for an individual.

Most individuals with an elevated blood lead level were male 133 (98%); 3 (2%) were female. Seventy-two (53%) workers were white; 11 (8%) were African American; and for 53 (39%) workers the race was unknown. Forty-nine (36%) workers were of Hispanic descent. Figure 1 identifies the distribution of workers with elevated blood lead levels by age group.

Figure 1. Age Distribution of Workers with Elevated Blood Lead Levels



Increased employer and employee awareness of the sources of lead exposure in the workplace and of methods for reducing worker exposure are essential for the prevention of occupational lead poisoning. To help employers identify potential lead hazards, TDH offers free worksite consultation. Part of the typical consultation visit is an industrial hygiene inspection that includes measurement of air lead levels, observation of work practices to assess exposure risk, and recommendations for reducing worker exposures. Worksite consultations are offered to employers of workers with reported blood lead levels of 60 mcg/dL or greater and to all workers with blood lead levels that average 50 mcg/dL over a 6-month period. Consultations are also conducted at the request of companies, regardless of the lead levels of workers. The distribution of elevated blood lead levels by occupation is presented in Table 1.

Another TDH prevention strategy is health care provider education. Workers with elevated blood levels can experience irritability, memory loss, headache, lassitude, arthralgia, decreased libido, myalgia, insomnia, paresthesia, abdominal pain, anorexia, nausea, and constipation. Acute encephalopathy may occur in adults with blood lead levels greater than 150 mcg/dL. Many signs of lead toxicity are nonspecific, highlighting the importance of including occupational information when taking the medical history. The results of the following investigation show the importance of prompt case reporting. The distribution of blood lead reports by level is shown in Figure 2.

Investigation. A laboratory reported elevated blood lead levels ranging from 41 to 78 mcg/dL (mean 51 mcg/dL) for 20 individuals working at a demolition site. During the initial EOEP contact, the company officials stated that they knew

Table 1. Number of Elevated Blood Lead Test Results by Occupation

No. of Tests	No. of Patients	Occupation
55	8	Supervisor and Manager
43	27	Solderer and Brazer
40	6	Miscellaneous Machine Operator
39	6	Paster
37	12	Industrial Machine Repairer
36	25	Unknown
32	7	Laborer, except construction
28	2	Miscellaneous Electrical and Electronic Equipment Repairer
23	3	Inspector, Tester, Grader, and Checker
21	3	Machine Feeder and Offbearer
16	2	Extruding and Forming Machine Operator
15	3	Freight, Stock and Material Handler
15	2	Miscellaneous Plant and System Operator
14	5	Electrical and Electronic Equipment Assembler
10	5	Furnace, Kiln, and Oven Operator
9	4	Welder and Cutter
8	1	Crushing and Grinding Machine Operator
8	1	Industrial Truck and Tractor Equipment Operator
6	1	Electrician
6	1	Lathe and Turning Machine Operator
5	1	Assembler
3	2	Automobile Mechanic
3	1	Hand Packer and Packager
3	2	Stock Handler and Bagger
2	2	Grinder, Abrader, Buffer, and Polisher
2	7	Painter
2	1	Rolling Machine Operator
1	1	Heat Treating Equipment Operator
1	1	Production Helper
n=483	n=142	

asbestos was on the premises when demolition started and had taken precautions to protect workers from asbestos exposure. They were unaware, however, that lead was present until several months later. Lead exposure was occurring when workers used a torch to cut through metal pipe that had been painted with lead-based paint. Once this lead hazard was identified, the company initiated blood lead testing for the lead-exposed workers and provided personal protective equipment (respirators and work clothing) for use during the demolition work.

In cooperation with the owner of the demolition site, EOEP met with the owner's representative and the demolition company site manager to discuss the health effects of elevated blood lead levels and the potential for take-home exposure. Subsequently, workers were provided with the same information. To evaluate the potential for take-home lead exposure, EOEP also offered assistance in conducting blood lead testing among young children and other family members of employees.

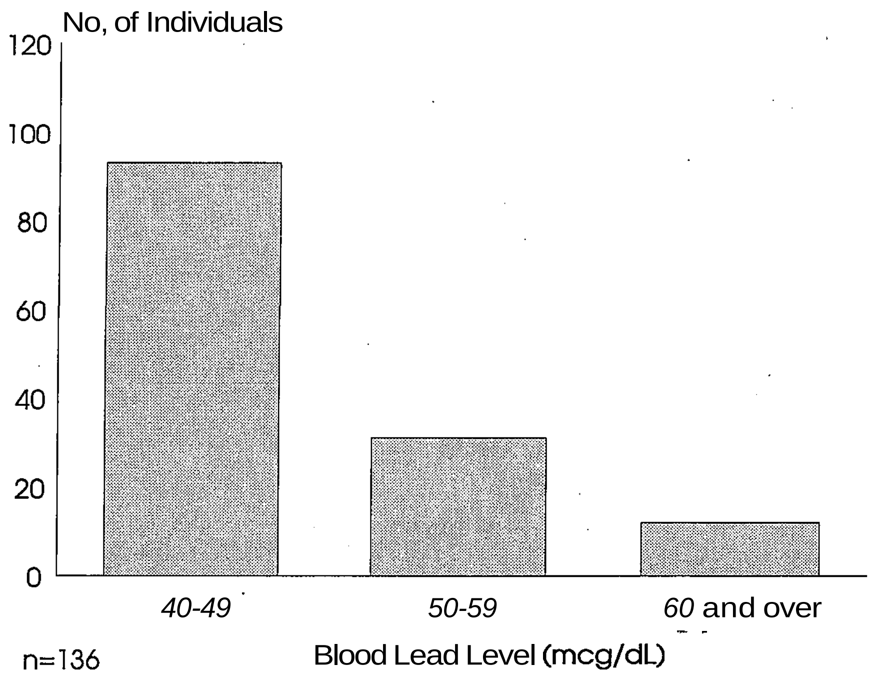
Two groups of men worked at the site. Group A consisted of 6 local workers (white, non-Hispanic men) who were hired for the asbestos removal area. They lived with their families within a few miles of the site. In addition, 20 Hispanic male workers (Group B) were hired for other demolition work. They were all from a city approximately 500 miles away and had no family in the area. Group B worked a rotating schedule (5 weeks at the site, 1 week off) and returned to their homes during their week off. Not all the men returned to the demolition site at the end of their week off.

At the time of the initial visit, only 3 local workers (Group A) remained with the company: 2 metal pipe cutters and 1 crane operator. Fifteen workers from Group B remained at the worksite. They had been removed from tasks involving lead exposure and were working in the asbestos removal area because of their elevated blood lead levels.

Six children from the local workers' families were tested for blood lead. One child had an elevated blood lead level (11 mcg/dL). The families and the health provider were informed of the blood lead results according to CDC guidelines for follow-up.

The company took an active interest in reducing employee exposure through protective measures that include prevention education. The employees continue to be monitored for elevated blood lead levels, and their levels have remained below 40 mcg/dL.

Figure 2. Distribution of Elevated Blood Lead Levels



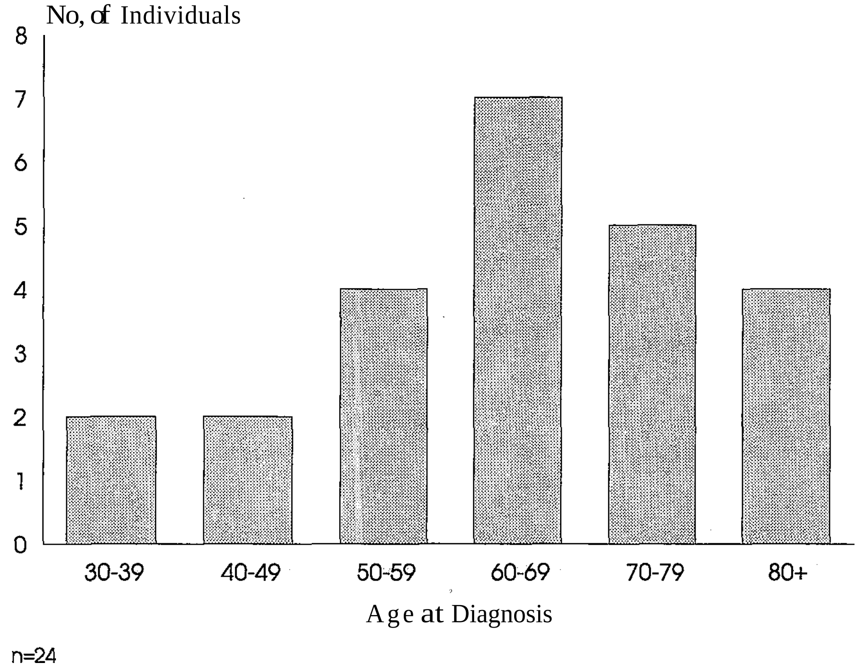
Noncommunicable Disease Epidemiology and Toxicology Division (512) 458-7269

Silicosis and Asbestosis

Silicosis

Lung disease secondary to exposure to dusty work conditions has been described since antiquity. Concern about the incidence of silicosis (lung scarring caused by exposure to silica) in Texas resulted in the inclusion of this condition in Texas' Occupational Disease Reporting Law enacted in 1985. This law requires that physicians and other health professional report all cases of confirmed or suspected silicosis to TDH. In addition to the passive surveillance required by law, active surveillance for silicosis was initiated by TDH in 1992 (supported by funding from NIOSH). Since that time TDH has sought identification of additional silicosis cases.

Figure 1. Silicosis Age Distribution



Current surveillance for silicosis also includes

- death certificate review for mention of silicosis as a contributing or underlying cause of death
- medical records review on all patients discharged with a diagnosis of silicosis at selected hospitals throughout the state

Unfortunately, reviews of death certificates and hospital medical records do not facilitate timely identification of individuals with silicosis, because death certificates are often not available until 6 months after the end of the calendar year in which the person died. Hospital medical record reviews typically identify individuals years after initial diagnosis.

EOEP received 26 reports of suspected or confirmed cases of silicosis during 1995. As in previous years, most of the silicosis cases reported in 1996 were identified through death certificates (11, 26%) and hospital medical records (11, 26%).

Two (8%) cases were reported by physicians, and 2 (8%) by hospitals. Both of these individuals had been hospitalized for treatment of illnesses unrelated to silicosis.

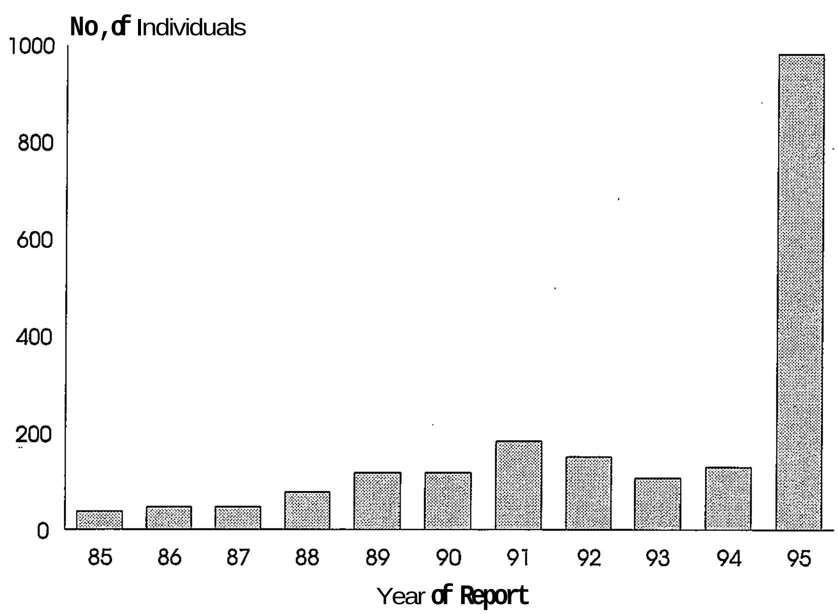
Of these 26 reports, 2 were for suspected cases in which a silicosis diagnosis was later ruled out. As a result, 24 cases were reported with a confirmed diagnosis of silicosis. Two of the individuals diagnosed with silicosis were also diagnosed with asbestosis; one worker had both silicosis and tuberculosis; and one worker had both silicosis and lung cancer. Information on smoking status was available for 14 workers; 7 (50%) of these were noted to be smokers.

Seventeen (71%) of the workers with silicosis were white, 5 (21%) were African American, and 2 (8%) were of unknown racial origin. Six of the workers were Hispanic, 11 (46%) were non-Hispanic, and the ethnicity was unknown for the remaining 7 (29%) workers. The age distribution for the workers is presented in Figure 1.

Accurate occupational information is often difficult to obtain. Death certificates, the source of numerous reports, may list the individual's last job rather than the occupation where the silicosis exposure occurred. If verification cannot be made that a particular occupation might result in exposure to silica, the worker's occupation is recorded as unknown. In 8 (33%) of the silicosis cases identified in 1995, the individuals received their silica exposure while working as sandblasters. General laborers, who cleaned the area after sandblasting was completed, accounted for the next largest occupational group at-risk for silicosis, with 4 (17%) workers receiving their exposure in these jobs. Three (12.5%) individuals worked in supervisory positions, 2 in a granite quarry, and 1 in a sandblasting company. Three workers were exposed to silica in various other occupations; the occupation was unknown for the remaining 6 (25%) workers.

Industries associated with the silicosis exposures EOEP investigated were as follows. Ten (42%) of the workers were in the construction industry, 2 (8%) were in mining, 3 (13%) were in manufacturing; 1 (4%) was in auto repair, 1 (4%) was in agriculture, and 7 (29%) were in unknown occupations.

Figure 2. Confirmed Asbestosis Reports by Year *1985-1995*



n=1987

In 1991 the prevention of the major occupational lung diseases in worker populations was included in the Healthy People 2000 Objectives established by the US Public Health Service. Prevention of occupational lung diseases depends on increasing employer and employee awareness of the causes of these diseases and the methods for reducing workers' exposures. To help employers meet these goals, TDH provides free assistance in identifying worksite practices that put workers at risk of direct or incidental exposure to silica. Educational literature, including a pamphlet on silicosis prevention for employers and workers, is available at no charge through the EOEP office.

In summary, silicosis remains an ongoing problem in Texas. Thorough, effective worksite follow-up and intervention relies on timely reporting of diagnosed cases. EOEP is developing a committee of advisors from industry, medicine, business, and employees to improve reporting methods and prevention strategies.

Asbestosis

Figure 2 shows the yearly increase in the number of reports to TDH during the 10 years since reporting began in 1985. During 1995, 977 confirmed asbestosis cases were reported to TDH. Physicians reported 201 (21%) of these cases, and EOEP obtained 114 (11%) cases reports through death certificate review. However, the large increase in 1995 was due primarily to the 662 (68%) confirmed asbestosis cases identified through an intensive medical record review in one pulmonologist's office.

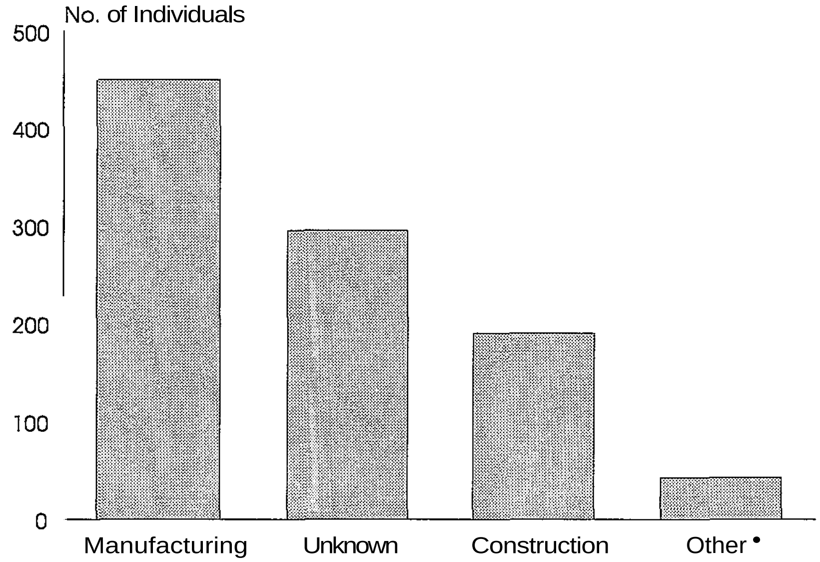
Of the 977 individuals with asbestosis, 940 (96%) were male and 37 (4%) female. Whites comprised 489 (50%) of the cases, and African Americans, 114 (12%). Non-Hispanics made up 140 (14%)

of the cases, and Hispanics, 26 (3%). However, since many medical providers do not collect data on race or ethnicity, race was unknown for 374 (38%) individuals, and ethnicity was unknown for 811 (83%).

Diagnoses of both silicosis and asbestosis were reported for one individual. Eighteen individuals had both lung cancer and asbestosis, and 11 individuals had both mesothelioma and asbestosis. Figure 3 identifies the industry where the asbestos exposure occurred. Medical records for 20 of the 37 women with asbestosis documented that they were exposed to asbestos fibers second hand (via a household member's asbestos-covered work clothes).

Noncommunicable Disease Epidemiology and Toxicology Division (512)458-7269

Figure 3. Asbestosis Reports by Industry



n=977
'Includes 20 women with second-hand asbestos exposure.

Occupational Tuberculosis Study

The Occupational Tuberculosis Study was designed and funded by CDC to obtain occupational history information from persons aged 16 to 64 years who have active tuberculosis (TB). Through identification of occupational groups at highest risk for developing active TB, the most effective interventions can be targeted to the most appro'priate work sites and occupations. The study was conducted throughout Texas during 1995 at 18 specific sites that had voluntarily agreed to collect the occupational data from TB patients. Participating sites included 13 local health departments and 5 regional TDH-TB control programs; all sites submitted completed Occupational TB Study questionnaires to the EOEP.

Table 1. Distribution of Study Participants by Type of Industry

No. of Participants	(%)	Industry
53	(8)	Construction
31	(4)	Restaurant
20	(3)	Hospital
19	(3)	Manufacturing
17	(2)	Agriculture
16	(2)	Automobile Sales/Service
15	(2)	Retail Sales
410	(58)	Other Industries
35	(5)	Missing Industry Information
94	(13)	Never Employed

n=710

Of the 2,369 cases of active TB reported to TDH in 1995,710 (30%) patients were aged 16 to 64 years **and** participated in the Occupational TB Study. Preliminary analysis of data collected on the Occupational TB Study questionnaires yielded the following results.

Table 2. Distribution of Risk Factors for Tuberculosis Among Study Participants

Respondents. with Risk Factor Percent (%)	Facilities Associated with Risk
36.7	No Risk Factor
21.8	Prison or Jail
14.9	Hospital
9.8	Parole or Probation Facility
9.0	Homeless Shelter
7.8	Nursing Home

Over half of the study participants (409, 58%) claimed that they were **currently** unemployed. Ninety-four of these persons (13% of the study participants) said they had **never** been employed.

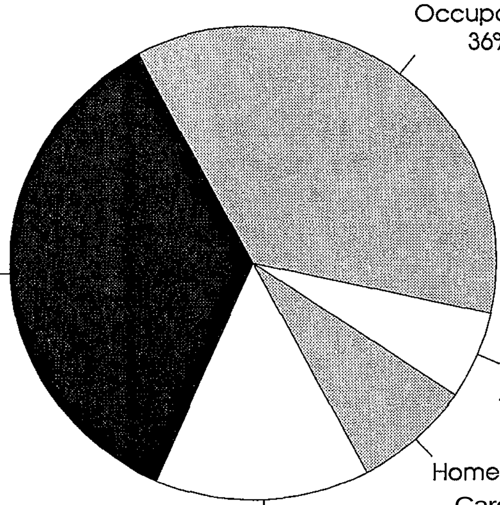
Industries in which participants said they were currently or most-recently employed are presented in Table 1. Participants named the construction industry as their current or most-recent industry of employment more often than any other industry.

The Occupational TB Study questionnaire included questions about possible risk factors for TB. Risk factors that were common (occurring in at least 7%) among the study participants included a history of living or working in a nursing home, hospital, homeless shelter, or correctional facility. Table 2 shows the frequencies of each of these risk factors among the study participants.

Health care workers are believed to have an increased risk of developing active TB. In this study, 51 persons (8.5% of the study participants) indicated that their most recent jobs had been in health care occupations or facilities. The distribution of these study participants by occupation is presented in Figure 1. The particular occupation of one individual is unknown. Nursing was the most common occupation among those persons who indicated recent employment in the health care field.

Noncommunicable Disease Epidemiology and Toxicology Division (512)458-7269

Figure 1. Distribution of Study Participants Recently Employed in Health Care, by Occupation

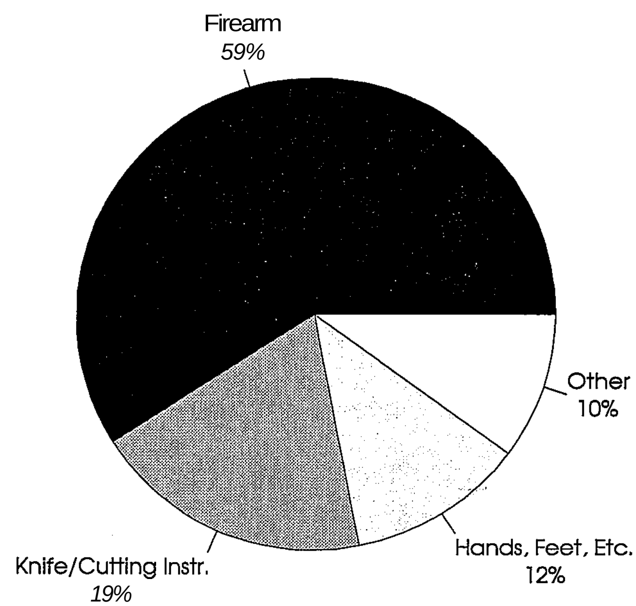


Family Violence-Related Deaths, 1994

Family violence is defined as "an act by a member of a family or household against another member that is intended to result in physical harm, bodily injury, assault, or a threat that reasonably places the member in fear of imminent physical harm" (Texas Family Code). Household or family members include individuals related by blood or affinity, marriage or former marriage, biological parents of the same child, foster children and parents, and current or former members of the same household (including roommates).

Since 1991 the Texas Department of Public Safety has, through the Uniform Crime Reporting Program, collected information on family violence incidents in the state. In 1995 the criminologists of the Texas Department of Public Safety electronically shared the 1994 data on family violence-related deaths with injury epidemiologists and prevention specialists of the Texas Department of Health. Data of particular interest to public health officials included demographics, date of injury, victim-offender relationship, and type of weapon. The data was analyzed to describe patterns of family violence-related deaths in the state.

Figure 1. Type of Weapon Used in Family Violence Deaths, 1994



n=276 Deaths

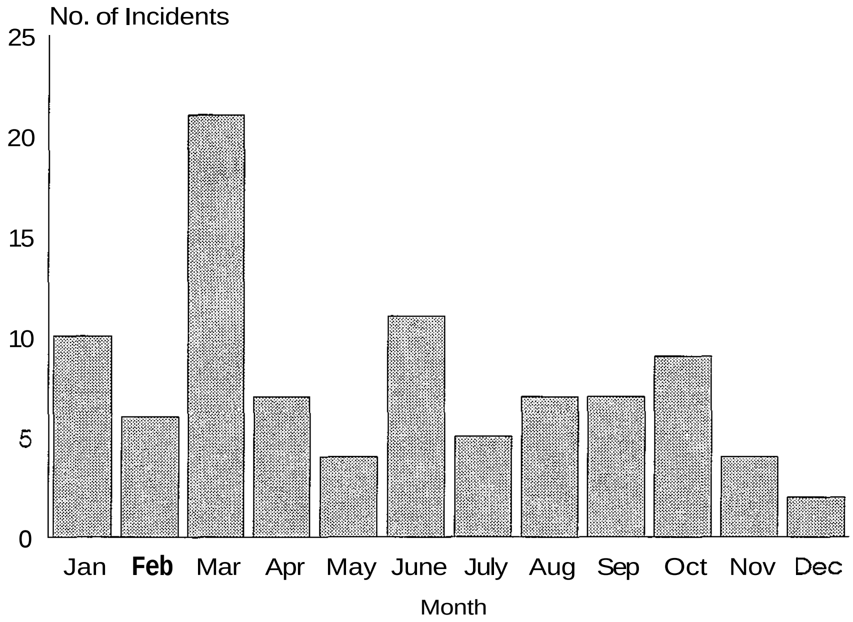
In 1994,286 individuals were killed in reported incidents of family violence in Texas. Victims were evenly split between males (141) and females (145). Ninety-seven percent (276/286) of the deaths involved 1 victim and 1 offender. The analysis of the data on incidents involving 1 victim and 1 offender will be presented here; information on multiple offenders or multiple victims are not presented.

Table 1. Victim/Offender Relationship, 1994

Relation (Victim to Offender)	No.	Percentage
Spouse	94	34
Common-law Spouse	36	13
Other Family Member	24	9
Sibling	23	8
Roommate	22	8
Child	22	8
Ex-spouse	15	5
In-law	13	5
Parent	10	3.5
Stepchild	10	3.5
Stepparent	5	2
Grandparent	1	0.5
Relationship Unknown	1	0.5
Total	**276**	**100**

Half (139/276) of the single victims killed by a single offender were female. Sixty percent (160/276) of the victims were between the ages of 20 and 39 years. Thirty-seven percent (104/276) of the decedents were black.

Figure 2. Family Violence Incident to Female Spouse by Month, 1994



n=93 Deaths

The victim-offender relationship among family violence-related deaths is shown in Table 1. Fifty-three percent (145/276) of the victims were killed by their spouse (married, common-law, or ex-spouse). Other relationships included victims who were the offender's other family member (9%), child (8%), sibling (8%), or roommate (8%).

As Figure 1 illustrates, 162 of the 276 victims (59%) were killed by a firearm (ie, handgun, rifle, shotgun), 52 (19%) were killed by a knife/cutting instrument, and 34 (12%) by personal weapons such as hands, feet, and fists.

Because of the growing interest in spousal violence, additional data analyses were performed on 145 family violence-related deaths caused by a current or former spouse (through traditional or common-law marriage). Of the 145 victims, 93 (64%) were female; white/non-hispanic and black victims each represented 52 (36%) of the deaths; 100 (70%) were aged 20 to 39 years. Victims and offenders were basically of the same race/ethnicity. For instance, 49 of the 51 white/non-hispanic victims (96%) were killed by white/non-hispanics, 51 of the 52 black victims (98%) were killed by blacks, and 34 of the 39 hispanic victims (87%) were killed by hispanics.

On average, 1 death occurred every 4 days to female spousal abuse victims. Thirty-three (36%) of these 93 incidents occurred on a Friday or Saturday. The highest number of incidents was in March (21), followed by June (11) and January (10) (Figure 2). Sixty-five percent (60/93) of the victims were shot to death.

This report examined only the characteristics of the deaths associated with family violence. Many more Texans suffer nonfatal consequences. In 1994, the Texas Department of Public Safety received reports detailing the circumstances of over 160,000 victims of family violence who did not die.

Injuy Prevention and Control Program
(512) 458-7266

Firearm-Related Deaths by Month of Occurrence

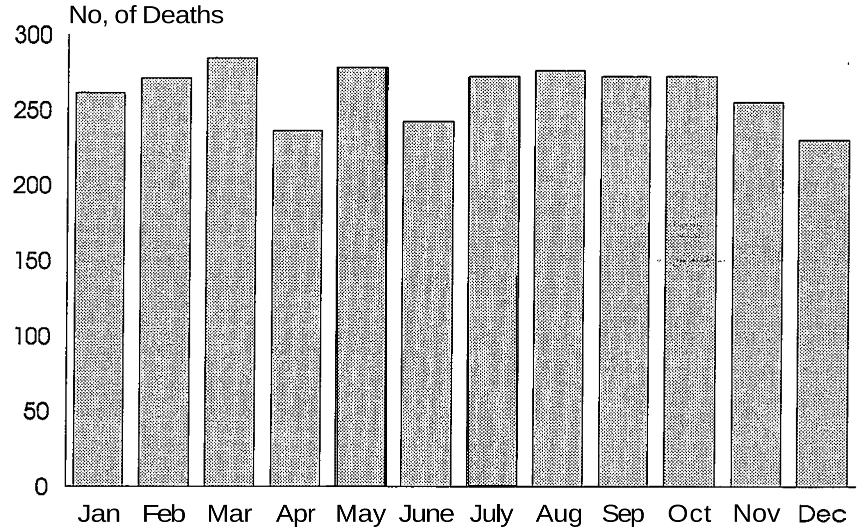
In 1994 there were 3,396 Texans who died from firearms. Information regarding month of injury was available for 93% (3149/3396) of the fatalities (Texas Department of Health Bureau of Vital Statistics).

As Figure 1 illustrates, the number of monthly shootings (all intentionalities) that resulted in death was fairly stable throughout the year. There were, on average, 263 deaths per month. The highest number of deaths (284) were in March, followed by May (278) and August (276).

Of the 3149 firearm-related deaths, 1514 (48%) were self-inflicted, 1482 (47%) were due to assaults, 92 (3%) were unintentional, and 61 (2%) were under legal or unknown circumstances. The highest number of self-inflicted incidents (152) were in May, followed by March (141), and September (137). Assault-related shootings fluctuated from a high of 140 incidents during August to a low of 106 incidents during June. November (11), August (10), and January (10) had the highest number of unintentional incidents.

Injury Prevention and Control Program
(512) 458-7266

Figure 1. Firearm-Related Deaths by Month of Occurrence, 1994



n = 3149

Group A Streptococcal Invasive Disease

Invasive group A *Streptococcus* (GAS) infections were made reportable in Texas in 1994. A case of invasive GAS infection is defined as isolation of group A *Streptococcus* from a normally sterile site of the body. During 1995, the first full year of GAS reporting, 95 invasive GAS infections were reported. The cases occurred in 27 different counties in Texas. Sixty-nine percent were reported from 4 counties: Harris (19), Dallas (17), Travis (17), and Bexar (13). The 23 other counties had 4 or fewer cases per county. Fifty percent of the GAS patients were males. Race was known for 88 (92%) of the patients: 51% were white; 39%, Hispanic; 9%, African American; and 1%, Asian.

Onsets of illness were reported in every month except August. Sixty-five percent of the cases had onset from February through June. Seventy-five percent of the patients had bacteremia, 10% had meningitis, and 8% had necrotizing fasciitis. Of the 7 patients who died of GAS, 6 resided in Harris County. Four of the patients who died were males; 6 were white. The causes of death were sepsis (3), necrotizing fasciitis (2), septic arthritis (1), and pneumonia (1).

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

Hantavirus Pulmonary Syndrome in Deaf Smith and Jefferson Counties

Hantaviruses, the agents of hantavirus pulmonary syndrome, are widely distributed RNA viruses that infect wild rodents. Transmission of virus to humans usually occurs when aerosolized excreta from an infected animal is inhaled. Hantavirus pulmonary syndrome (HPS) is characterized by adult respiratory distress syndrome (ARDS). The vast majority of cases have been caused by Sin Nombre Virus (SNV). However, at least 5 cases have been due to 3 non-SNV viruses: New York, Bayou, and Black Creek Canal.

After 4 or 5 days of a flu-like illness, infected patients usually present with fever, tachypnea, tachycardia, hypotension, and rales or crackles. Symptoms include fever, myalgias, chills, cough, nausea, vomiting, headache, diarrhea, malaise, shortness of breath, dizziness, arthralgia, back or chest pain, abdominal pain/tenderness, and sweats. Abnormal laboratory findings include thrombocytopenia, an elevated hematocrit, and an elevated lactate dehydrogenase (LDH), aspartate aminotransferase (AST), and alanine aminotransferase (ALT).

The first recognized outbreak of HPS began in May 1993 where New Mexico, Arizona, Colorado, and Utah converge. Since then 131 cases have been confirmed from 24 states. Fifty-eight percent of the patients have been male. Patients have ranged in age from 11 to 69 years. The case-fatality rate is about 50%.

The Texas Department of Health (TDH) confirmed 2 cases of Hantavirus Pulmonary Syndrome (HPS) in 1995. The first patient was a 15-year-old Hispanic male from Deaf Smith County who became ill in May. His initial symptoms were flu-like with nausea, vomiting, and progressive weakness. On May 17, 4 days after onset, he presented at a local emergency room with no measurable blood pressure and barely palpable pulses. After rehydration with lactated ringers, he had a temperature of 102.6" F, pulse rate of 96, respiratory rate of 28, and a systolic blood pressure of 82 mm Hg. His heart sounded normal and his lungs were clear, although his O_2 saturation was only in the 70s. With a preliminary diagnosis of septic shock, he was given 500 millileters of 5% albumin, placed on ceftriaxone, and transferred to a tertiary care hospital.

On May 18 he was tachycardic, hypotensive, and hypoxic to the point of requiring intubation. His chest x-ray showed bilateral interstitial and alveolar infiltrates consistent with ARDS. Despite aggressive therapy, the patient died approximately 24 hours after being transferred. The patient's serum, tested at TDH, contained antibody to SNV.

The second patient, a 23-year-old white male from Jefferson County, survived his illness. He presented to a local hospital on November 5, with a 7-day history of worsening back pain, fever, shortness of breath, myalgias, nausea, vomiting, and diarrhea. On admission he had a partial pressure of oxygen (pO_2) of 60 on room air, a chest x-ray showing bilateral interstitial infiltrates, and thrombocytopenia. Despite aggressive supportive care, the patient developed progressive elevation of liver enzymes and hypoxemia. On November 8 the patient was transferred to a tertiary care hospital.

He was admitted to the intensive care unit in moderate respiratory distress. On arrival the patient had a temperature of 97.2" F, pulse of 110, respiratory rate of 32, and a blood pressure of 210/100 mm Hg. His chest x-ray continued to show bilateral interstitial infiltrates.

On November 10 the patient was intubated. The following day he was noted to have thrombocytopenia, hypocalcemia, and his renal function deteriorated. Beginning November 12 the patient began to improve; he was discharged on November 17. TDH was notified that the patient's serum contained antibody to hantavirus on December 5. Further testing indicated that the patient was infected with the Bayou virus, and not SNV.

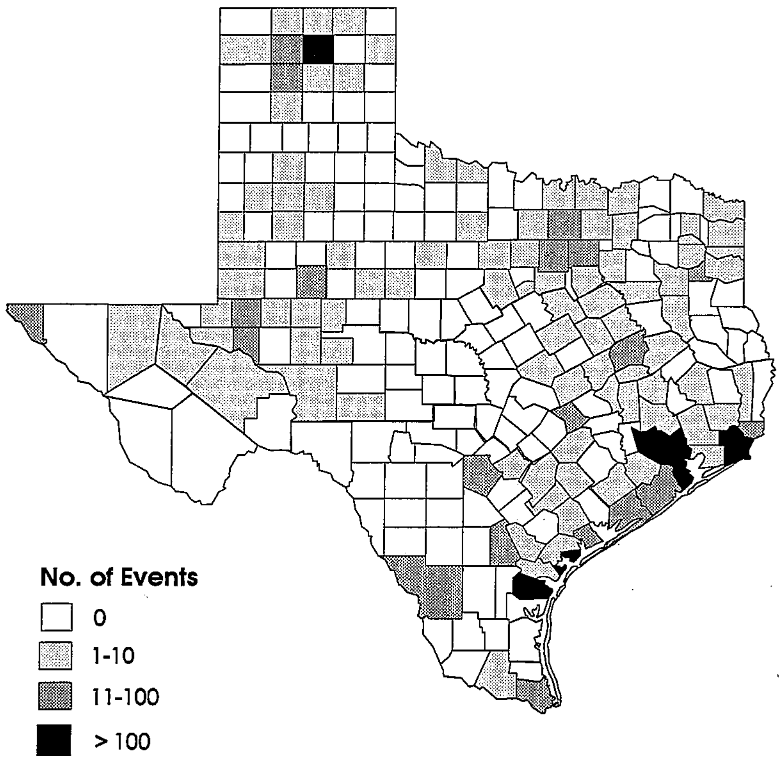
Two other HPS cases have been reported in Texas. The first, in June 1993, was a fatal case in a previously healthy 58-year-old woman from Angelina County. About 9 months later, in March 1994, a 29-year-old Hispanic woman from Kleberg County survived infection.

Infectious Disease Epidemiology and Surveillance Division (512)458-7676

Hazardous Substances Emergency Events Surveillance

Under a cooperative agreement with the Agency for Toxic Substances and Disease Registry, the Texas Department of Health has conducted surveillance of hazardous substances emergency events in Texas since January 1993. To collect information about these spills and releases, the staff use a number of sources, including state environmental agencies, local fire department hazardous materials units, hospitals, and federal agencies. Data are collected on emergency events that meet the case definition of an uncontrolled or illegal release or threatened release of hazardous substances or the hazardous by-products of substances. Information obtained about the releases is recorded on standardized data collection forms that include information on the event, substance(s) released, victims, injuries, evacuations, and emergency decontaminations.

Figure 1. Number of Hazardous Substances Emergency Events by County



In 1995, 2,130 reported hazardous substances emergency events met the case definition, compared with 1,258 events in 1993 and 1,256 events in 1994. The increase in the number of spill events for 1995 can be attributed, in part, to more reporting sources and increased efficiency in data collection. Of the 2,130 events reported in 1995, 1,958 (91.9%) occurred at fixed facilities and 172 (8.1%) were related to transportation. Figure 1 shows the distribution of these events by county. As in previous years, the majority of releases occurred on the Texas Gulf Coast.

Table 1. Distribution of the Number of Substances Released by Type of Event

	Type of Event								
	Fixed Facility			Transportation			All Events		
No. of Substances Released	No. of Events	(%)	No. of Substances	No. of Events	(%)	No. of Substances	No. of Events	(%)	No. of Substances
1	1,896	(96.8)	1,896	165	(95.9)	165	2,061	(96.8)	2,061
2	44	(2.2)	88	5	(2.9)	10	49	(2.3)	98
3	6	(0.3)	18	1	(0.6)	3	7	(0.3)	21
4	4	(0.2)	16	0	(0.0)	0	4	(0.2)	16
5	2	(0.1)	10	1	(0.6)	5	3	(0.1)	15
>5	6	(0.3)	125	0	(0.0)	0	6	(0.3)	125
Total	1,958		2,153	172		183	2,130		2,336

Table 2. Most Frequently Spilled or Released Chemicals

Rank	Chemical	Number	(%)
1	Sulfur dioxide	214	(10.0)
2	Benzene	74	(3.5)
3	Ammonia	70	(3.3)
4	Sulfuric acid	69	(3.2)
5	Hexane	56	(2.6)
6	Ethylene glycol	54	(2.5)
7	Sodium hydroxide	50	(2.3)
8	Butadiene	48	(2.3)
9	Hydrogen sulfide	45	(2.1)
10	Hydrochloric acid	43	(2.0)
Total		723	(33.9)

Table 1 shows the number of substances released by type of event. Substances can include releases of single chemicals or mixtures of several chemicals. Over 95% of releases from both fixed facility and transportation events involved one chemical or one mixture. Table 2 presents the most frequently spilled or released chemicals that were not part of mixtures. The 10 chemicals listed in the table were involved in approximately one-third of the reported events. Ten percent of all releases involved sulfur dioxide from fixed facilities. At least another 347 releases involving mixtures of chemicals contained 1 or more of these 10 chemicals, so that approximately one-half of all reported releases contained 1 or more of the chemicals listed on Table 2.

The frequency of hazardous substances releases varied by time of day, day of week, and time of year. Of the 2,123 events with information about time of occurrence, approximately 65% occurred between 6 AM and 6 PM. Emergency events were less frequent on the weekends. The number of events was lowest for the period of January through March (430) and highest for the period April through June (603).

A total of 256 persons experienced injuries related to emergency events. Approximately 10% of transportation events resulted in injuries compared with 2% of fixed facility events. As in previous years, the majority (61%) of the injured were from the general public. Approximately 34% were employees and 5% were responders. The

Table 3. Distribution of Injuries by Type of Event

	Type of Event					
	Fixed Facility		Transportation		All Events	
Type of Injury	No. of Injuries	(%)	No. of Injuries	(%)	No. of Injuries	(%)
Chemical burns	4	(2.0)	1	(0.4)	5	(1.1)
Dizziness or other CNS*	11	(5.5)	19	(7.5)	30	(6.6)
Eye irritation	20	(9.9)	37	(14.6)	57	(12.6)
Headache	26	(12.9)	20	(7.9)	46	(10.1)
Heat stress	2	(0.9)	0	(0.0)	2	(0.4)
Nausea	20	(9.9)	37	(14.6)	57	(12.6)
Respiratory irritation	90	(44.8)	88	(34.8)	178	(39.2)
Skin irritation	3	(1.5)	3	(1.2)	6	(2.5)
Thermal burns	6	(3.0)	3	(1.2)	9	(2.0)
Trauma	1	(0.5)	12	(4.7)	13	(2.9)
Vomiting	4	(2.0)	15	(5.9)	19	(4.2)
Other	14	(7.0)	18	(7.1)	32	(7.0)
Total	201		253		454	

The number of injuries is greater than the number of victims, since a victim can have more than 1 injury.

"Central nervous symptoms or signs

majority (77%) of victims were males. Ages of the injured ranged from 1 to 86 years with a median age of 35 years.

Over 80% of the victims were injured by releases in 4 counties: Nueces (55%), Harris (14%), Dallas (8%), and Travis (5%). The rest of the injuries occurred in 20 other counties throughout Texas. Table 3 shows the types of injuries distinguished by whether the event occurred at a fixed facility or was related to transportation. For both types of events, respiratory irritation was the most common injury reported. Other injuries or symptoms frequently reported included nausea (12.6%), eye irritation (12.6%), headache (10.1%), and dizziness or other central nervous system signs or symptoms (6.6%). Approximately 36% of the victims were injured by a single event involving the release of the solvent cumene, a colorless liquid with a sharp, penetrating odor. Another 53 persons were injured by exposure to chlorine, and 23 were injured by exposure to ammonia. The rest of the victims were injured by a wide variety of chemicals.

No deaths were reported among the 256 persons injured, although 33 (12.9%) were admitted to the hospital. About twice as many (17.9%) victims injured at fixed facility events were admitted to the hospital than were victims (8.3%) of transportation-related events. Injured employees were more likely to be hospitalized (27.9%) than was the general public (5.7%); no responders were hospitalized.

Officials ordered evacuations in 79 (3.7%) of the 2,130 reported events. These evacuations were more likely to be ordered for transportation-related events (8.1%) than for fixed facility events (3.3%). Estimated numbers of persons who left their homes, schools, or places of business ranged from 2 to 3,500 with a median number of 35 persons per event requiring evacuation. Ammonia releases accounted for approximately 18% of events with ordered evacuations, the highest proportion of any chemical release. An estimated 4,665 people were evacuated as a result of releases of ammonia.

Information obtained from the hazardous substances emergency events surveillance system can help identify risk factors and associated morbidity and mortality related to these events. In Texas, these events are most likely to occur in the Gulf Coast counties and at fixed facilities; however, transportation-related events are most likely to result in injuries. Although sulfur dioxide is one of the most frequently reported releases, injuries are more likely to occur with releases of ammonia and chlorine. Employees who are injured in these events are more likely to sustain injuries serious enough to warrant hospitalization than the general public or responders. This information can be useful in education programs for manufacturers and transporters of hazardous substances as well as for local emergency planning committees, first responders, firefighters, and hazardous materials units.

Noncommunicable Disease Epidemiology and Toxicology Division (512)458-7222

Health Assessment Activities: Assessment and Education

The Health Risk Assessment and Toxicology (HRAT) program of the Texas Department of Health (TDH) evaluates possible risks to human health from chemicals in the environment. Toxicologists and epidemiologists in the program make recommendations for actions to protect the public from exposures to hazardous substances. Program staff also meet with or send materials to health professionals and people in affected communities to educate them about chemicals in their environment.

In 1995, HRAT staff worked with citizens, physicians, and/or agency representatives to address health issues at 55 different sites in counties all over Texas (Figure 1). Requests for assistance came from

- Individual citizens concerned about chemicals in drinking water, pesticide over spraying, lead paint in their homes, other environmental issues,

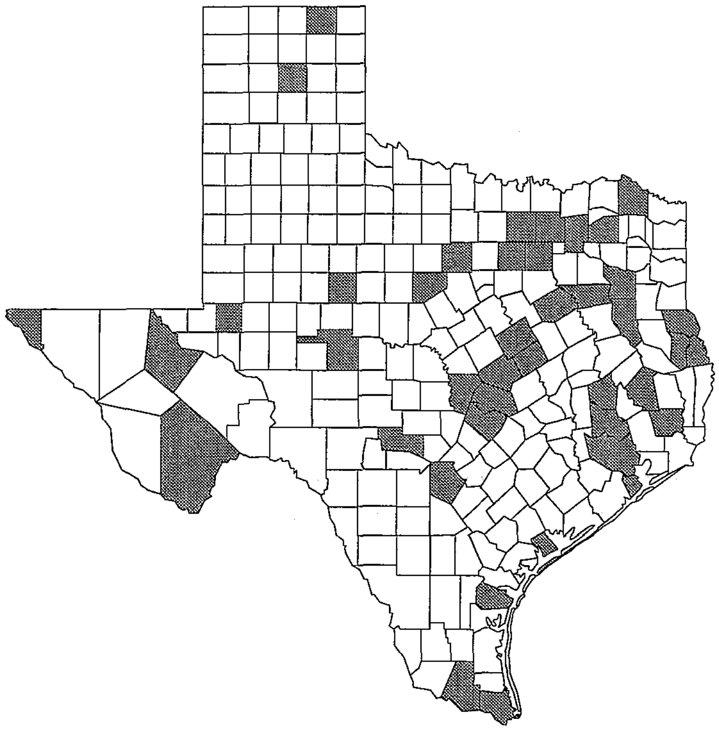
OR

- Citizens or other agencies that wanted an independent assessment of potential health effects from chemicals that may be released to the air, water, or land by hazardous waste sites or particular active industrial sites in Texas.

Response to these requests may involve written consultations explaining the known health effects associated with specific chemicals, likelihood of exposure, and ways to avoid or minimize exposure. Some requests may lead to long-term and comprehensive investigations such as a public health risk assessment (PHA). A PHA includes

- Review of historical air, soil, and water sampling data for a site,

Figure 1. Counties Where Activities Have Been Conducted



- Visit to the site to visually inspect structures, geography, etc., and ask questions of employees who work at the site,
- Review of demographic information about the people who live near the site,
- Analysis of the potential of human exposure to site contaminants,
- Assessment of the potential risk to public health,

AND

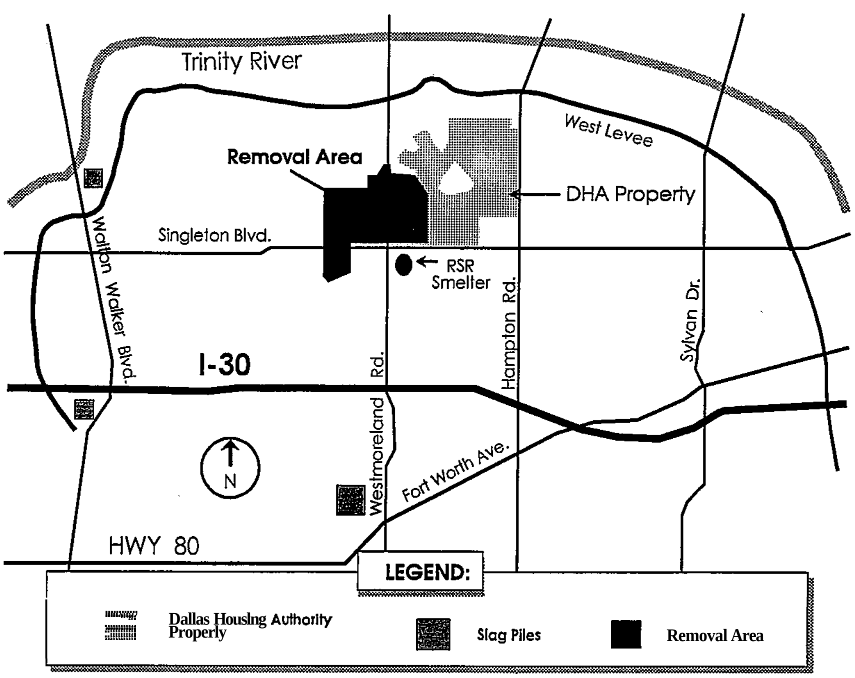
- Recommendations to protect human health.

Public health assessments were completed in 1995 by the HRAT program for two National Priorities List (NPL) Superfund sites in Texas: the RSR/Murph Metals NPL site in West Dallas and the Alcoa (Point Comfort Operations)/Lavaca Bay NPL site near Port Lavaca on the Gulf coast. After review by the Agency for Toxic Substances and Disease Registry (ATSDR), the U.S. Environmental Protection Agency (EPA), the Texas Natural Resource Conservation Commission (TNRCC), and the public, the public health risk assessments for these two sites were published in 1995. Program staff have enacted a number of the public health interventions recommended in each health assessment.

RSR/Murph Metals NPL Site

Site History. The RSR/Murph Metals NPL site is located in Dallas County and encompasses a 13.6 square-mile area of West Dallas including the RSR lead smelter and surrounding neighborhoods (Figure *2).* The smelter operated from 1934 until 1984 when it was shut down due to concern about lead in air emissions. Originally called Murph Metals, the smelter was bought by RSR in 1971. Air emissions containing lead were released from the smelter smokestack from 1934 until 1984, contaminating the soil in residential areas close to the smelter. In addition, slag material and battery chips containing lead from the smelter were dumped in city land fills and were also used as fill in the yards and driveways of some West Dallas residences. Soil in neighborhoods around the smelter was cleaned up by RSR in 1983-84, and again in 1991-94 by EPA after the blood lead standard was lowered by the Center for Disease Control and Prevention. A proposal made in May 1993 to add this site to the NPL was finalized in September 1995. Currently, EPA is in the process of demolishing the old smelter buildings and smokestack and transporting them to a hazardous waste disposal site. EPA will also remove lead contaminated soil from the smelter site and replace it with clean fill.

Figure 2. RSR/Murph Metals NPL Site, West Dallas

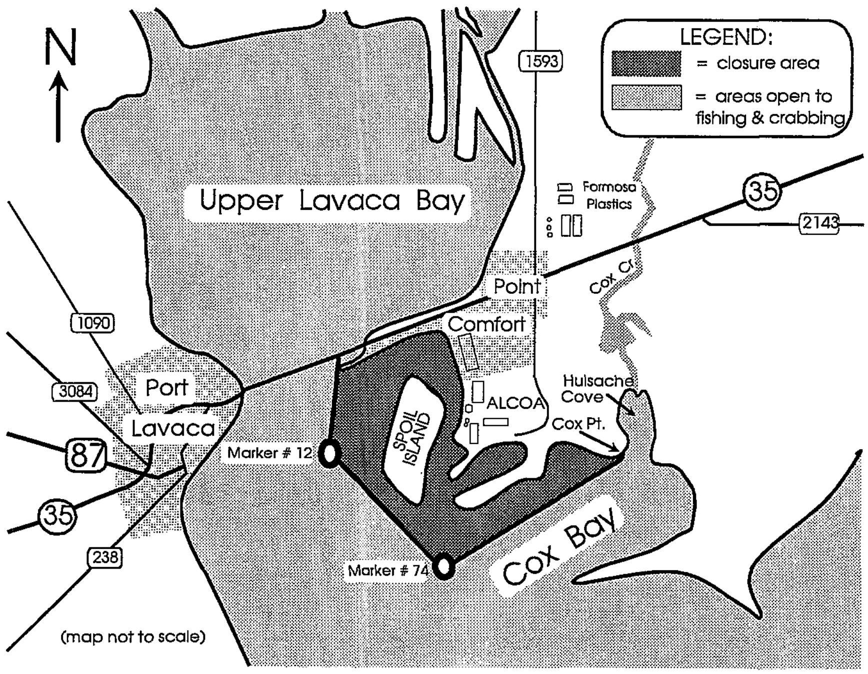


HRAT Activities. The most significant finding of the health risk assessment was that the clean-up level for residential areas set by EPA was protective of human health. A 1993 ATSDR/City of Dallas blood lead study found that while 8.5% of children in West Dallas had blood lead levels above 10 micrograms per deciliter, lead-contaminated soil was not a significant source of exposure. Additionally, the percent of children with blood lead levels >10μg/dL was consistent with that observed in other neighborhoods. By comparison, in 1983 when the RSR smelter was operating, 91.5% of West Dallas children had blood lead levels above 10μg/dL. The current rate of children with blood lead levels above 10μg/dL in West Dallas is consistent with rates in Texas as a whole (9.5%). The study found that current exposure of West Dallas children to lead is most likely due to a variety of sources including: lead paint in the home, exposure from lead in the parents' workplace that is brought into the home, and lead in eating or drinking utensils. Because of continuing community concern about lead after the clean-up, the health assessment recommended additional educational efforts in the West Dallas community to address questions about the clean up and any potential risk to human health. HRAT staff prepared a fact sheet on the RSR Superfund site to answer these questions raised by community members. This fact sheet and other TDH pamphlets on reducing childrens' exposures to lead from household sources were distributed to health clinics and other social service offices in West Dallas. In addition, HRAT staff made presentations to more than 150 junior high students at the Environmental Science Academy, which is adjacent to the old RSR smelter. Staff explained basic toxicology and exposure concepts and talked with the students about soil clean-up in West Dallas. Similar community education efforts in West Dallas will continue in 1996.

Alcoa (Point Comfort)/Lavaca Bay NPL Site

Site History. This Alcoa alumina refining plant is located on Lavaca Bay at Point Comfort in Calhoun County (Figure **3).** Lavaca Bay is situated on the Gulf coast between Corpus Christi and Galveston. Mercury used in a chlor-alkali process at the Alcoa plant in the late 1960s was released into Lavaca Bay. Due to an increasing awareness of the harmful effects of mercury, releases by Alcoa into Lavaca Bay were reduced by approximately 81% between 1970 and 1979. Mercury in sediments bioaccumulated in fish and crabs in that portion of the Bay near the plant. In 1988, after many years of sampling, TDH closed a part of Lavaca Bay to the taking of fish and crabs because of the elevated levels of mercury in fish and crabs. This site was proposed to the NPL in June 1993 and finalized in February 1994.

Figure 3. Alcoa (Point Comfort)/Lavaca Bay NPL Site



HRAT Activities. The final health risk assessment for the Alcoa (Point Comfort Operations)/ Lavaca Bay site was published in 1995. This assessment found that the major health risk from the site was consumption of mercury contaminated fish and crabs from Lavaca Bay. Mercury levels in fish and crabs taken from inside the closed area of the Bay are significantly higher than are the mercury levels in fish and crabs taken from other parts. Educational outreach to people who may still be eating fish and crabs from the closure area was recommended. To better understand community education needs related to the site, HRAT staff have attended meetings of the Citizens Advisory Panel to Alcoa (CAPA).

Made up of community members and representatives from local government and businesses, the CAPA has input on issues relating to the Superfund clean up process. Because of this involvement, the HRAT program has worked on these educational efforts:

- A presentation by TDH staff in the community and one to the CAPA to explain the reasons for the fishing/crabbing closure in Lavaca Bay and explain the potential human health effects from mercury poisoning
- Working with Alcoa, local officials, and community members a) to post new warning signs in English, Spanish, and Vietnamese near boat ramps in the area to inform people about the closure area and, b) to post signs on pilings in the water so that boaters entering the closure area will also be aware of the mercury contamination
- Publishing and distributing more than 9,000 pamphlets to government offices, clinics, and businesses in the area to identify the closure area in the Bay and educate residents about the dangers of mercury

These educational efforts will continue in 1996 and will include meetings with local shrimpers who may be at particular risk from eating fish or crabs from the closure area.

Noncommunicable Disease Epidemiology and Toxicology Division (512)458-7269

Hepatitis A and B

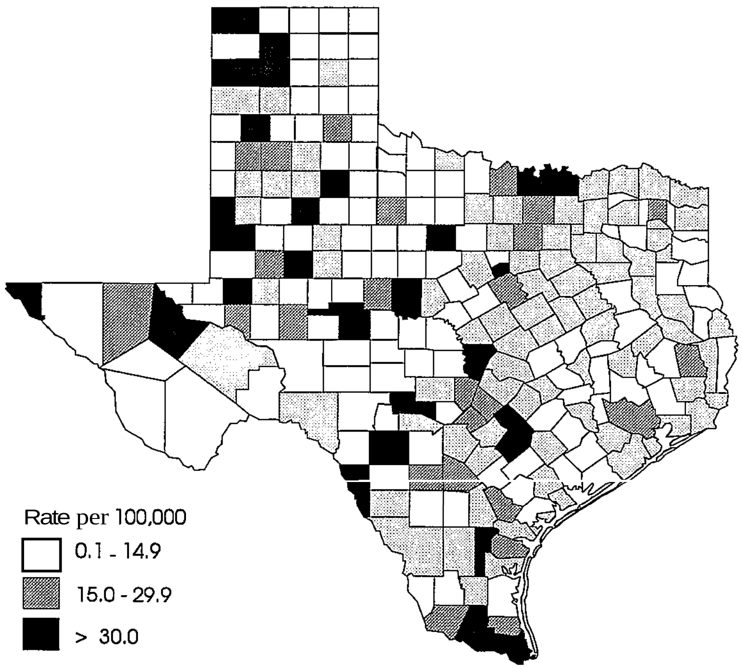
Viral hepatitis continues to be an important public health problem in Texas. This major liver disease category includes the infections caused by epidemiologically and structurally complex viruses: hepatitis A virus (HAV), hepatitis B virus (HBV), hepatitis C virus (HCV), hepatitis D virus (HDV, also known as Delta agent), hepatitis E virus (HEV), and the newly identified hepatitis G virus (HGV). Additional hepatotropic viruses with differing nomenclature also are currently under evaluation as possible pathogens.

There were 4,628 cases of viral hepatitis reported to the Texas Department of Health in 1995, down slightly from the 1994 total of 4,703. Of the 1995 cases, 98% were infections due to either HAV, HBV, or HCV. HAV infections accounted for 65% of the total, and 26% were due to HBV. There were 340 acute HCV cases, representing 7% of the total. There has been a steady decrease over the past few years in the numbers of reported cases of "non-A, non-B hepatitis" and "hepatitis, type unspecified," the latter including cases diagnosed on a clinical basis. This decrease is most likely due to increased use of specific hepatitis serologic testing. The decline in case totals is most notable for non-A, non-B hepatitis, as laboratory testing for HCV continues to improve. There were only 2 cases of hepatitis D reported in 1995. Hepatitis E, an enterically acquired infection, has yet to be confirmed in Texas, although physicians along the Texas-Mexico border are aware of the potential for this disease to appear in their communities.

Hepatitis A

Hepatitis A is an acute, self-limiting infection caused by an enterically acquired virus. The hepatitis A virus (HAV) is concentrated in stool, and infection is transmitted from person to person by the fecal-oral mode. Illness begins abruptly, and symptoms commonly include fatigue, mild fever, malaise, nausea and vomiting, abdominal pain, and loss of appetite. Jaundice, dark-colored urine, and diarrhea occur less frequently. Many individuals, particularly young children, have asymptomatic infections. For this reason, it is difficult to determine a population's level of susceptibility based solely on the incidence of symptomatic illness.

Figure 1. Hepatitis A Incidence Rate per 100,000 Population by County



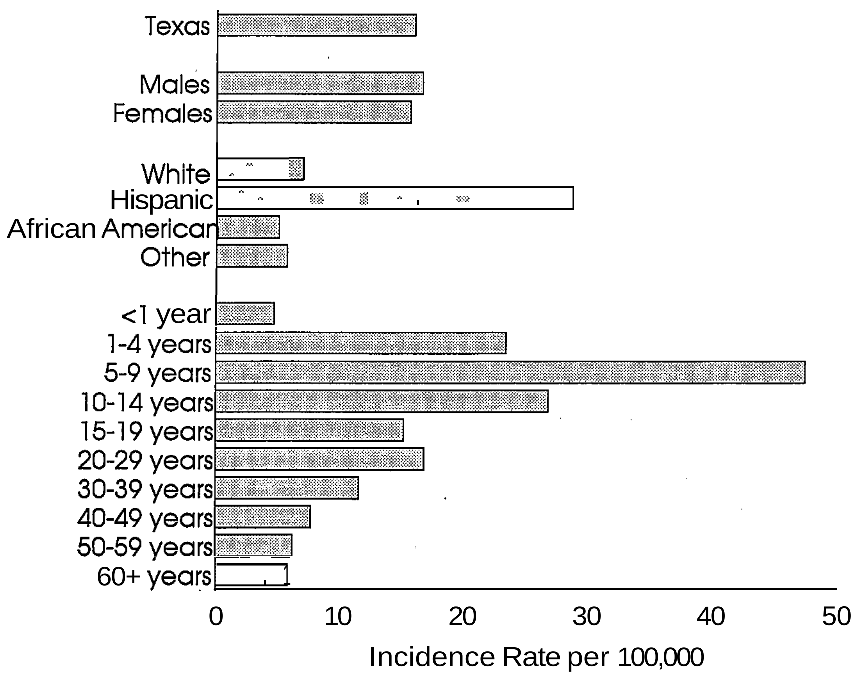
In Texas, hepatitis A is among the most frequently reported infectious diseases. This year, 3,001 cases were reported from 140 counties throughout the state (Figure 1). The 1995 total represents a small increase (4%) over the 2,877 cases reported in 1994. As in 1994, the statewide incidence rate was approximately 16 cases per 100,000 population. The case-fatality ratio remained .03% in 1995; only 1 individual died as a result of HAV infection this year.

Of 3,001 cases reported in 1995, 62% occurred in ethnic Hispanics, 26% in whites, 4% in African Americans, and less than 1% in other racial groups. The incidence rates per 100,000 population were 28 for Hispanics, 7 for whites, 5 for African Americans, and 6 for all others. The incidence rates for males and females were approximately the same. However, some age-related differences were notable (Figure 2).

Hepatitis A spreads easily within families and in child-care facilities and schools. Children have the greatest risk of infection; a third of all reported cases occurred in children under 10 years of age. As in previous years, the highest incidence rate overall (47 cases per 100,000) was in the age group of 5-9 years (Figure 2). Incidence rates were particularly high among Hispanic children (66 cases per 100,000 for children under age 10). In contrast, the incidence rate for white children under age 10 was 34 cases per 100,000. Among Hispanics, the 5-9 age group accounted for nearly 30% of the total reported cases and had an age-specific incidence rate of 101 cases per 100,000. Whites tend to acquire the disease later in life; 42% of cases affecting this group occurred in individuals between the ages of 20 and 39 (an age-specific incidence rate of 46 cases per 100,000).

Although there were no community-wide outbreaks in 1995, hepatitis A remains a significant public health problem in Texas. Controlling the spread of hepatitis **A** has depended on proper hygiene with an emphasis on hand washing, as well as the timely administration of immune globulin (IG), which continues to be in short supply. Fortunately, the first hepatitis A vaccine was licensed for use in the United States this year. The vaccine is very effective, protecting up to 98% of recipients 2 weeks after the first dose. A 2-dose series is indicated for adults, while a 2- or 3-dose series is indicated for children between the ages of 2 and 18. Hepatitis A vaccine is not licensed for use in children under 2 years of age.. At this time, the Texas Department of Health recommends the vaccine only for susceptible persons who anticipate travel to a developing country, and for members of groups at high risk for hepatitis A. Seroprevalence studies of various populations may identify other high-risk groups, and these recommendations may be expanded. Although hepatitis A vaccine is one of the most effective ever developed, an emphasis on proper hygiene and hand washing remains essential in controlling the spread of HAV and other foodborne illnesses.

Figure 2. Reported Cases of Hepatitis A per 100,000 Population by Sex, Race/Ethnicity, and Age



Hepatitis B

Hepatitis B virus (HBV) infections are clinically indistinguishable. from those caused by other hepatitis viruses. The epidemiologic characteristics of HBV infections, however, are clearly those of a bloodborne' disease, one which has had a major impact in health care for over thirty years.

HBV is commonly transmitted from person to person via direct contact with infectious blood or sexual secretions. HBV may also appear in the saliva of persons with a high degree of infectivity, signified by a positive hepatitis B e antigen (HBeAg) status. The severity of the disease ranges from clinically silent infections to fulminant hepatitis. The risk of remaining chronically infected with HBV varies inversely with age at infection: 5% to 10% of acute HBV infections among adults progress to chronic infections, whereas up to 90% of infected newborns, if left untreated with hepatitis B immune globulin (HBIG) and hepatitis B vaccine, remain lifelong carriers of HBV.

There were 1,211 cases of hepatitis B reported to the Texas Department of Health (TDH) from 122 counties in 1995. This number represents a 15% decrease compared with last year's case total (Table 1). Hepatitis B incidence has declined steadily over the last 4 years from an all-time high of close to 2,000 cases reported in 1991. This downward trend is also observed elsewhere in the US. One of the reasons for the decline is increased use of tests measuring the IgM antibody to the hepatitis B core antigen (IgM anti-HBc). This test helps clinicians distinguish acute hepatitis B infections from chronic hepatitis B. More than 99% of the Texas cases are reported on the basis of specific serologic testing.

Hepatitis B transmission in the US is clearly associated with adult behaviors, especially sexual behavior. Typical risk factors for acquiring hepatitis B include injection drug use, other percutaneous contacts with blood, sexual contact, and personal contact with another hepatitis B patient. In the US in recent years, sexual contact with multiple partners has replaced injection drug use as the predominant risk factor. Historically, males have accounted for more cases than have females. When hepatitis B incidence data for Texas are examined by gender and race/ethnicity, however, this overall pattern shows some variability. For hepatitis B cases identified among whites and Hispanics, there are 1.5 to 2 males for every female. For cases among African Americans, however, the proportion is equal; and for cases among Native Americans, persons of Asian descent, and Pacific Islanders, there are **3** cases in females for every *2* cases in males. The overall incidence rate among persons in this last general race/ethnicity category was 14 cases per 100,000 population in 1995 and 23 cases per 100,000 in 1994. These data are consistent with established observations of high incidence levels at all ages among these peoples in this country and elsewhere in the world (Figure 3).

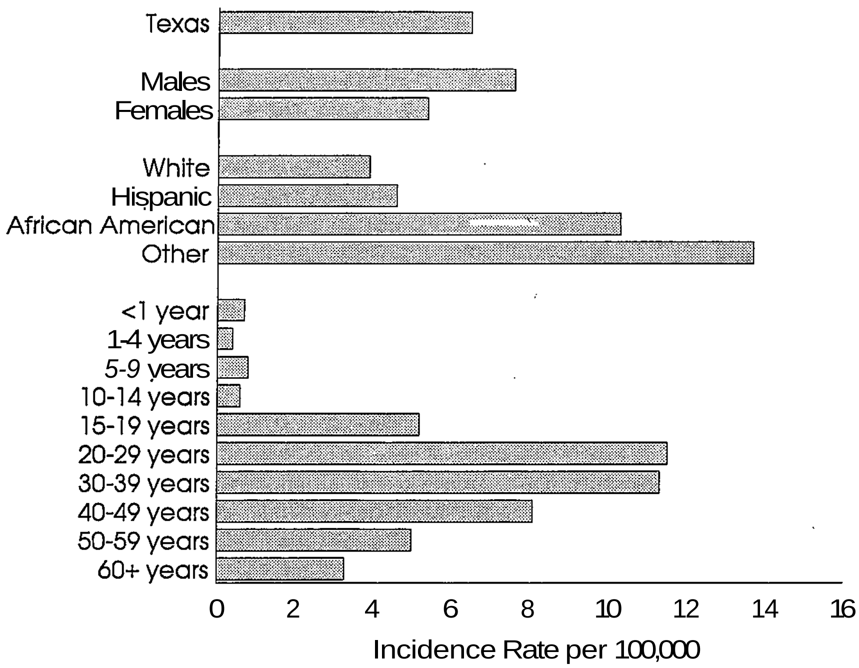
Table *1.* The Incidence and Demographics of Hepatitis B, *1994* and *1995*

	1995	1994
Case Total	1,211	1A22
Counties Reporting	122	114
Incidence Rate* Statewide	6.5	7.8
Incidence Rate* By Race/Ethnicity		
White	3.9	4.6**
Hispanic	4.6	5.0
African American	10.3	13.0
Other*""	13.7	22.7
Male/Female Ratio	1.4:1	1.4:1
Deaths	1	2
Case/Fatality Rate (%)	0.1	0.1

* Rates are expressed as cases per 100,000 population.
** This rate has been recalculated to show specific incidence among whites.
*** The race/ethnicity group designated as 'Other" includes persons of Asian descent, Pacific Islanders, and Native Americans.

The distribution of hepatitis B cases by age groups clearly shows a focus of incidence among adults and adolescents (Figure 3). Approximately 80% to 90% of all hepatitis B cases occurred in persons younger than 50 years of age. Twelve percent of the cases reported among African Americans were in adolescents under the age of 20, whereas adolescents represented only 6% and 8% of the cases among whites and Hispanics, respectively. Eighty-five percent of the adolescent cases among African Americans in 1995 were female. For Hispanics and African Americans, incidence levels peaked among those 20 to 29 years of age, whereas for the rest of the population the age group with peak incidence levels for hepatitis B was the group 30 to 39 years old. Acute hepatitis B incidence tapers off as the populations get older and prevalence increases.

Figure 3. Reported Cases of Hepatitis B per 100,000 Population by Sex, Race/Ethnicity, and Age



There were no outbreaks of hepatitis B in 1995. Only one death was reported for acute hepatitis B: a 60-year-old white female from Potter County died from fulminant hepatitis.

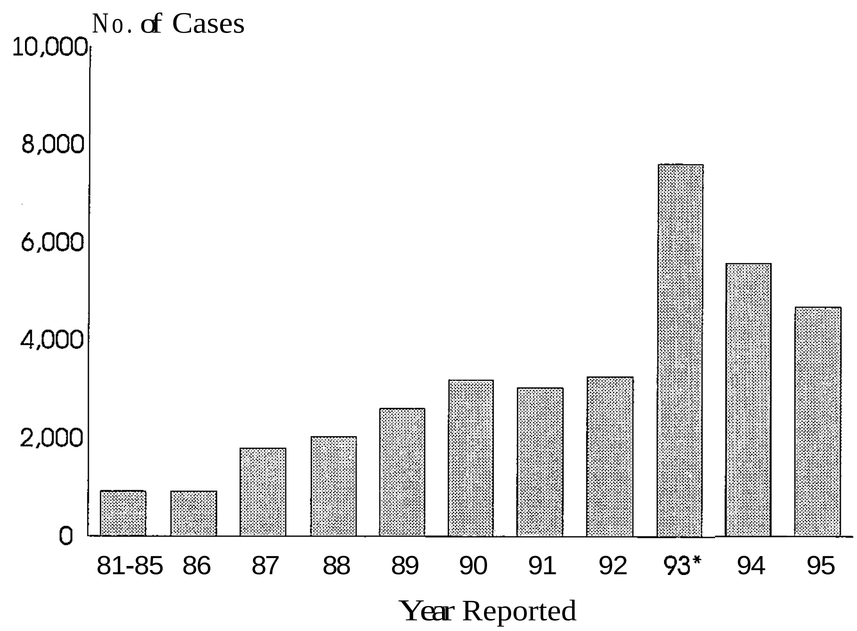
Prevention of hepatitis B has been a public health priority since the first hepatitis B vaccine was licensed in 1981. Over the last 15 years health education campaigns have matured, and recommendations for vaccine use have called for expanding the use of vaccine to larger and larger segments of the population. An important change occurred in 1995 that affected Texas strategies for vaccinating children against hepatitis B. The US Public Health Service Advisory Committee on Immunization Practices (ACIP) recommended that previously unvaccinated children 11 years of age should receive hepatitis B vaccine.

Infectious Disease Epidemiology and Surveillance Division
(512) 458-7676

HIV/AIDS

Acquired immunodeficiency syndrome (AIDS) is a specific group of diseases or conditions that result from severe immunosuppression caused by infection with the human immunodeficiency virus (HIV). This virus specifically infects and depletes a subgroup of T-lymphocytes called helper T-cells. Laboratory analysis identifies these by typing specific cell-surface markers on the lymphocyte. The helper T-cells have identifying surface markers called CD4; the term CD4+ applies to lymphocytes that are positive for this marker by laboratory testing. The decline of CD4+ T-cells has proven to be an indicator of HIV disease progression.

Figure 1. AIDS Cases by Year of Report, 1981-1995
35,562 Cumulative Cases Reported through 12/31/95



'Expanded AIDS surveillance definition Implemented

The AIDS case surveillance definition has been modified and expanded over time to reflect the increased knowledge and improved technology related to the disease. The 1993 revised case definition for AIDS, along with other changes, included all HIV-infected persons with CD4+ T-cells fewer than 200 per microliter of blood or less than 14% of total lymphocytes. Prior to this change, the case definition relied primarily on the identification of one of several indicator diseases in HIV-infected patients.

The inclusion of the CD4+ criteria caused a marked increase in cases reported in 1993 (Figure 1). However, the apparent peak seen in 1993 and the lower numbers seen in 1994 and 1995 **should not** be interpreted as a true decline in AIDS morbidity. Rather, the 1993 count was artificially inflated due to the tremendous number of cases added that year to the reporting system as a result of the new case definition. One cause of the 1993 upsurge in cases might be described as a backlog effect. Since reporting sources knew beforehand what the new criteria would be, prospective cases had been collected for some time prior to January 1,1993. When the new definition was implemented, these prospective cases became AIDS cases and were reported in 1993. Independent of backlog effects, making the AIDS definition more inclusive would also be expected to elevate case counts in 1993 and thereafter, compared to counts in earlier years, unless overall AIDS incidence fell. This expectation has been realized so far; although lower than the previous two years, 1995 case reports remain higher than the number of AIDS cases reported in 1992, the year prior to the definition expansion.

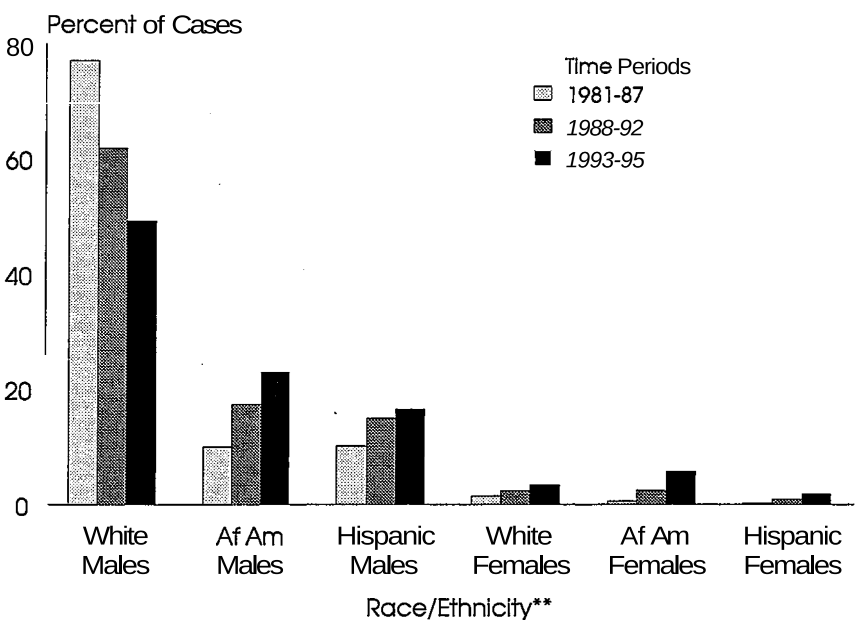
The number of AIDS reports in 1995 was lower than in 1994, and it is unclear as yet whether this should be attributed to a decrease in incidence or to a reporting artifact. To analyze trends developing in the AIDS epidemic, adjustments must be made to achieve comparability between reports falling under the 1993 definition and those meeting previous definitions. Due to the high proportion of AIDS cases now reported using CD4+

counts rather than AIDS indicator diseases (60% of cases reported in 1995), it is necessary to estimate when an AIDS defining indicator disease will develop for those people reported with low CD4+ counts in order to provide a basis for comparison. Further investigation into such methods is currently underway to identify more clearly trends within the epidemic and isolate factors specifically related to aspects of the reporting system.

15 Years of the AIDS Epidemic in Texas

Nationally, more than 500,000 AIDS cases have been reported. Through the end of 1995, 35,562 AIDS cases have been reported in Texas since the epidemic began in the early 1980s. Over this time period, the AIDS surveillance definition was markedly changed in late 1987 and, most recently, in 1993. In order to examine how the characteristics of people reported with AIDS in Texas have changed over the past 15 years, time periods corresponding to changes in the AIDS case definition will be analyzed -- 1981-1987, 1988-1992, and 1993-1995.

Figure 2. Proportion of Adult-Adolescent* AIDS Cases for Each Racial/Ethnic Group and Sex Over Time



*Age 13 or older at time of AIDS diagnosis
**Other racial/ethnic groupings totalled <1% each period

Only 10% of cumulative cases were reported during the first time period, 40% in the second, and 50% in the last three years. The share of AIDS cases among women increased from 3% of all cases in 1981-1987 to 11% in 1993-1995. The percentage of cases reported for whites decreased from 78% in 1981-1987 to 52% in 1993-1995. Conversely, African American and Hispanic shares increased from 11% to 29% and 10% to 18%, respectively, when comparing the earliest time period to the most recent. In the early years of the epidemic, white men accounted for 77% of the reported AIDS cases, but by the later years, this percentage had fallen to 49%. As the proportion of white men fell, all other race-sex groups increased. The largest increase in shares of AIDS cases occurred among African American men, from 10% in the period 1981-1987 to 23% in 1993-1995. Among women, African Americans also increased most dramatically in proportion of AIDS cases, from less than 1% of cases in 1981-1987 up to 6% of all adult-adolescent AIDS cases reported in Texas during the years 1993 to 1995 (Figure 2).

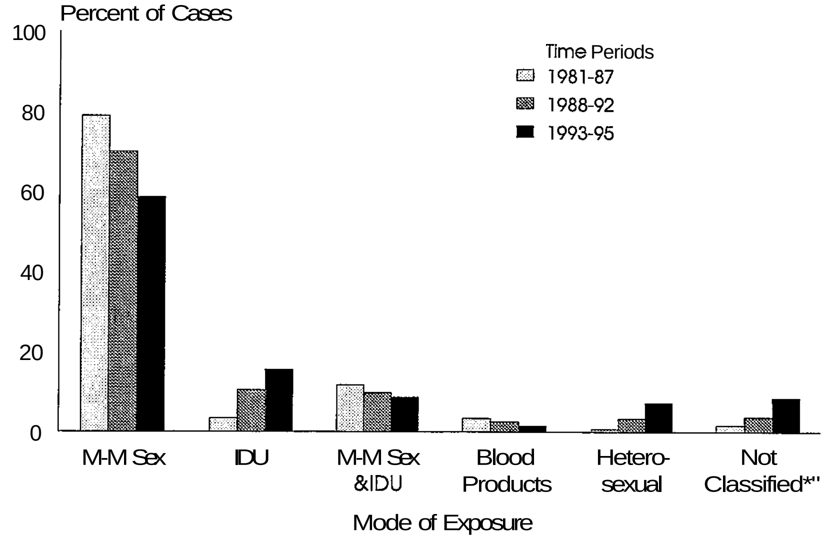
The distribution of reported mode of exposure categories changed over time as well. The percentage of AIDS cases in the exposure category "male-to-male sex" decreased from 79% to 58% when comparing 1981-1987 to 1993-1995. Injecting drug use as a primary mode of exposure increased in share of all cases four-fold: from 4% to 16%. Cases attributed to exposure through heterosexual contact increased from 1% to 7%. The proportion of cases with risk not identified is greater in more recent years due to the fact that less time has elapsed for investigation (Figure 3).

1995 Texas AIDS Statistics

Texas ranked fourth in the United States with 4,674 AIDS cases reported in 1995. The overall rate was 25.1 AIDS cases per 100,000 population. HIV/AIDS is the leading cause of death for all people 25 to 44 years of age in Texas. In the U.S., it is the leading cause of death for men age 25 to 44 years and the third leading cause of death for women in this age group.

Gender and Ethnicity. During 1995, the rate of reported AIDS cases among African Americans (69.0 per 100,000 population) was more than 3 times higher than rates for whites (20.4) and Hispanics (18.2). Among females, the case rate was 5.9 cases per 100,000 population. In the African American female population, however, the rate was significantly higher at 28.1 cases per 100,000. The Hispanic female rate was 3.5, and the white female rate was 2.8. The 1995 AIDS rate for males was much higher than that for females at 44.8 per 100,000. The African American male population had the highest rate, 113.3, followed by white males at 38.8 and Hispanic males at 32.6 AIDS cases per 100,000 population (Table 1).

Figure 3. Proportion of Adult-Adolescent* AIDS Cases for Each Mode of Exposure Over Time



*Age 13 or older at time of AIDS diagnosis
**The percent of unclassified cases is higher in more recent years since less time has elapsed for investigation.

Mode of Exposure. Although lower than previous years, the exposure category "male-to-male sex" constituted the highest proportion (62%) of AIDS cases among men. Injecting drug use was identified as the most likely route of transmission for 13% of men reported with AIDS in 1995. Among women, 39% were infected through heterosexual contact and 37% through the use of injecting drugs. A greater percentage of women (21%) than men (12%) were initially left unclassified as to mode of exposure (Figure 4). For both sexes, the proportion unclassified will decline as more time is available for investigation of risk.

Table 1. AIDS Cases Reported in 1995 by Sex and Race*

Sex/Race	Cases		Rate per 100,000
Males			44.8
White	2,045	(43.8)	38.8
African American	1,170	(25.0)	113.3
Hispanic	865	(18.5)	32.6
All Other	35	(0.7)	---
Females			**5.9**
White	152	(3.3)	2.8
African American	314	(6.7)	28.1
Hispanic	91	(1.9)	3.5
All Other	2	(<0.1)	---
Total Cases	**4,674**	**(100.0)**	**25.1**

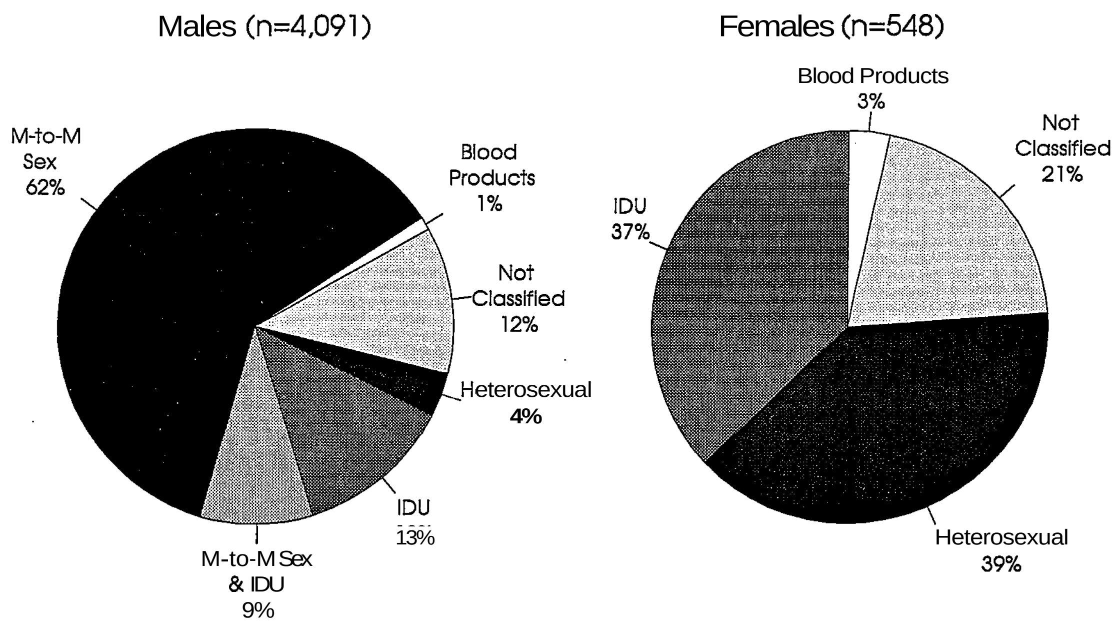
* The category *All Other* includes any racial/ethnic group not listed as well as those cases not specifying race. Therefore, a rate is not calculated.

Geographic Distribution. Most AIDS cases in Texas continue to be reported from metropolitan areas. The largest number of cases reported in 1995 was from Harris County (1,179) followed by Dallas (1,178), Bexar (405), Travis (312), Tarrant (215), and El Paso Counties (135). Ranking these counties by rate slightly affects the order. Dallas County had the highest rate (58 per 100,000 population), followed by Travis (51), Harris (39), and Bexar Counties (31). Tarrant and El Paso Counties' rates were 16 and 20 cases per 100,000 population, respectively. Only 32 of the 254 counties in Texas have never reported an AIDS case. In 1995, AIDS cases were reported in 5 counties which previously had no cases. The Texas Department of Corrections reported 6% of all 1995 AIDS cases. Although still centered mainly in the metropolitan areas of the state, the AIDS epidemic continues to spread to more rural areas, requiring all counties to face the challenges of providing prevention education, healthcare, and services.

Prenatal HIV Testing

As the number of women infected with HIV increases, so does the potential number of infants infected through perinatal (mother-to-child) transmission. Of the 309 pediatric AIDS cases cumulatively reported in Texas, 224 (73%) were infected through perinatal exposure. Without any preventive treatment, 20-25% of HIV-infected pregnant women give birth to an infant infected with HIV. In 1994, preliminary studies suggested that this perinatal transmission rate could be lowered to 8% with the use of zidovudine (AZT) therapy, a two-thirds reduction in the risk of perinatal HIV transmission. To be as effective as possible, zidovudine is to be administered orally to the mother during her pregnancy, intravenously during labor and delivery, and orally to the infant for 6 weeks after delivery. Although potentially beneficial to both mother and newborn, if unaware of their HIV+ status, pregnant women infected with HIV will not receive this treatment. To increase the likelihood that pregnant women will be aware of their HIV infection, and thereby receive zidovudine therapy, the Centers for Disease Control and Prevention released guidelines in July 1995 calling for routine HIV counseling of all pregnant women by their medical providers to inform these women of the potential benefits in knowing their HIV status.

Figure 4. Adult-Adolescent* AIDS Cases Reported in 1995 Mode of Exposure by Gender



*Age 13 or older at time of AIDS diagnosis

Basing their legislation on these federal guidelines and with the intention of decreasing the chances of unborn babies becoming infected with HIV, the Texas Legislature passed a law (HB 1345) in 1995 requiring all licensed medical professionals providing prenatal care to pregnant women to:

- distribute specific materials printed by the Texas Department of Health about HIV, AIDS, and syphilis to their pregnant patients,
- verbally notify the woman that an HIV test will be performed unless she objects,
- explain that the HIV test will not be anonymous, and
- submit the blood sample to a certified laboratory for testing for HIV antibodies as well as for syphilis.

These actions must be taken at the first prenatal visit and followed up with an additional HIV test performed at delivery.

If the woman refuses to be tested for HIV infection, the test may not be conducted. The option of anonymous testing is to be explained, and the woman is to be referred to a site that performs anonymous testing. If the results of testing indicate HIV infection, the medical provider is required to give the woman information on treatment of HIV/AIDS or refer her to another agency that provides treatment for HIV/AIDS with the intention of starting zidovudine therapy (with the woman's permission) as soon as possible to lessen the chance of perinatal transmission of HIV. This state law went into effect January 1, 1996.

HIV and STD Epidemiology Division (512) 490-2545

Influenza Virus Infections

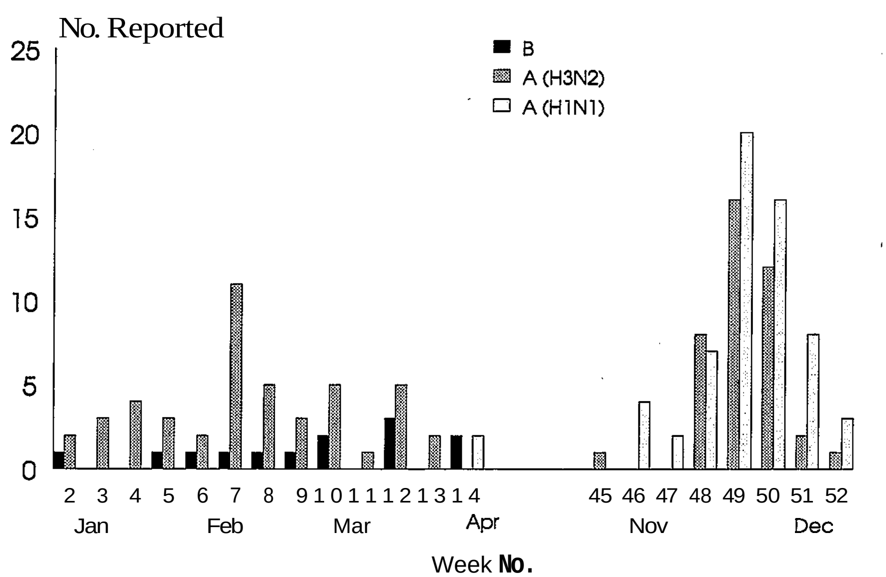
Influenza viruses cause acute respiratory illness in persons of all age groups. This viral infection is characterized by fever ≥100°F, chills, malaise, fatigue, sore throat, nasal congestion, headache, and muscle aches. These symptoms appear abruptly after an incubation period of **1** to **3** days. Without prescription antiviral treatment, the illness runs its course in approximately **3** to **7** days.

Two major types of influenza viruses cause extensive morbidity and mortality in humans; influenza A and influenza B viruses. Influenza viruses are members of the family *Orthomyxoviridae,* a group of pleomorphic, ribonucleic acid (RNA)-containing viruses whose prominent characteristics include an envelope that contains the hemagglutinin and neuraminidase proteins.. The antigenic properties of these two important proteins give rise to various subtypes and strains for influenza A viruses, and strains for influenza B viruses. Over time new strains of virus appear in response to rising levels of immunity to existing strains. The gradual evolution of new strains within existing subtypes is commonly referred to as "antigenic drift." The appearance of a totally new subtype of influenza A virus is known as "antigenic shift." Of these two phenomena, the disease implications of an antigenic shift are most and include an influenza "pandemic" with excess morbidity and mortality.

Influenza viruses circulate in the Northern hemisphere for up to 6 months, with the "flu season" beginning in the late fall and continuing into early spring. Short seasons of approximately 8 to 12 weeks are usually dominated by a single virus type, whereas seasons of 16 to 26 weeks duration often have co-circulation of both influenza A and B viruses.

The Texas Department of Health (TDH) and the Influenza Research Center (IRC) at Baylor College of Medicine in Houston conduct influenza virus surveillance. The TDH-based surveillance activities are extended to the local health departments in many of the major cities in Texas, whereas the IRC surveillance includes only Houston/Harris County. Each center uses tissue culture methods for virus isolation from clinical specimens, followed by subtyping or strain determinations via hemagglutination techniques.

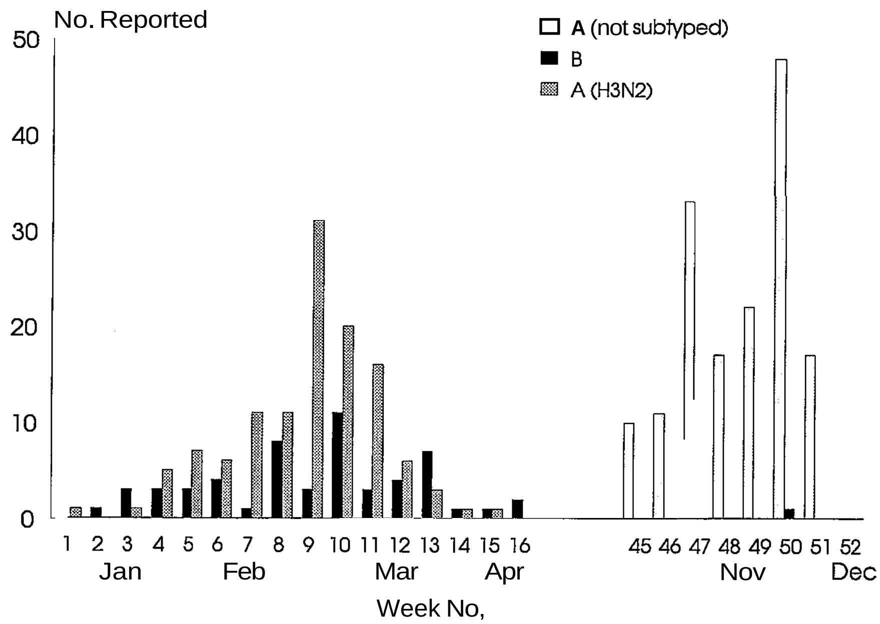
Figure 1. Influenza Virus Isolates Recovered by TDH-based Statewide Surveillance, by Week of Specimen Collection



1994-95 Influenza Season

Figure 1 depicts the 1995 distribution of influenza viruses recovered from TDH-based surveillance by week of specimen collection. Virtually the entire 1994-95 flu season occurred from January through April 1995, with the peak of virus activity

Figure 2. Influenza Virus Isolates Recovered by the Influenza Research Center, Harris Co., by Week of Specimen Collection



noted from weeks 7-9 (late February to early March). A total of 61 virus isolates were recovered during the 1994-95 season from specimens submitted from the following counties: Bexar, Dallas, El Paso, Galveston, Lubbock, Nueces, Potter, Randall, and Travis. Of the Texas patients positive for influenza virus infections, 7% (4/61) had been vaccinated with the current flu vaccine prior to their illness. Influenza A/Shangdong/09/93 (H3N2)-like viruses and influenza B/Panama/45/90-like viruses co-circulated throughout the state for the majority of the season. Influenza A/Texas/36/91 (H1N1)-like viruses were isolated only from samples submitted from El Paso during week 14 in April. These influenza virus circulation patterns in Texas are consistent with national patterns, with late emergence of influenza A (H1N1) viruses in the Rocky Mountain region of the country. Overall, 79% of the viruses isolated in Texas during the 1994-95 season via TDH-based surveillance were influenza A viruses, and 21% were influenza B. These percentages closely matched the proportions of A and B viruses elsewhere in the US. Of the Texas influenza A viruses, 96% were influenza A (H3N2), and 4% were influenza A (H1N1).

The distribution of influenza viruses recovered via IRC surveillance by week of specimen collection is depicted in Figure 2. The 1994-95 flu season in Houston/Harris County ran from January through April, with the peak of virus activity in week 9 (early March). Influenza A/Shangdong/09/93 (H3N2)-like viruses and influenza B/Panama/45/90-like viruses co-circulated throughout the season. There was no influenza A (H1N1) virus identified during this time. Overall there were 175 influenza viruses recovered in Houston, 69% of which were influenza A (H3N2) and 31% were influenza B.

1995-96 Influenza Season

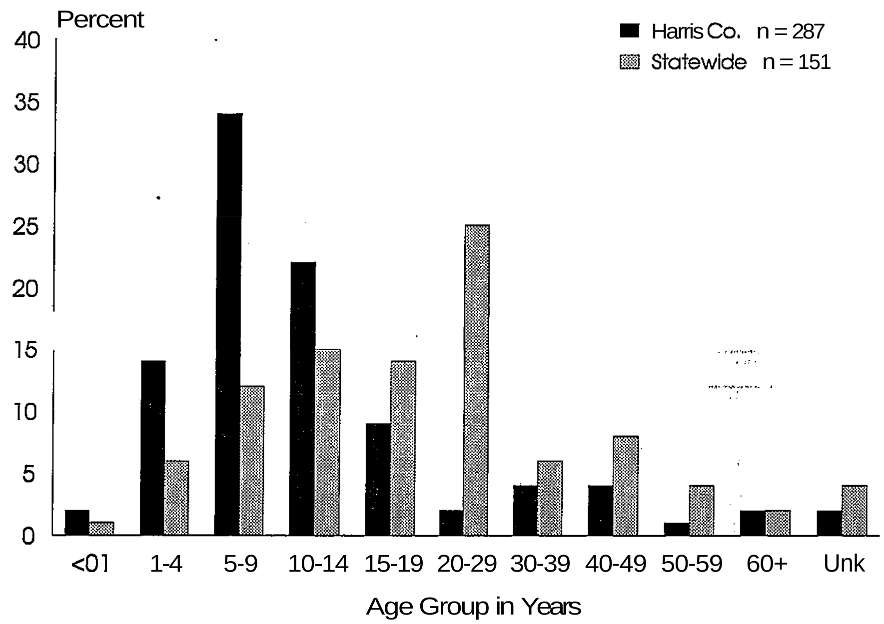
The 1995-96 flu season started in early November 1995 during week 45. The first virus identified via TDH-based surveillance was influenza A/Johannesburg/33/94 (H3N2)-like, isolated from a Dallas patient who was exposed during a trip to England late in October. Influenza A/Texas/36/91 (H1N1)-like viruses co-circulated with influenza A/Johannesburg/33/94 (H3N2)-like viruses during the months of November and December 1995, with 60% of the viruses isolated being subtyped H1N1. There were no influenza B viruses identified by TDH-based surveillance during these two months (Figure 1). IRC-based surveillance, however, did isolate 1 influenza B/Beijing/184/93-like virus from a specimen submitted in Houston during Week 50 (Figure 2).

TDH-based surveillance recovered 100 viruses during November and December from the following counties: Bexar, Dallas, El Paso, Galveston, Grayson, Lubbock, Navarro, Nueces, Potter, Randall, Stephens, Tarrant, Taylor, Travis, and Williamson. Of the 100 patients identified with culture-confirmed influenza in November and December 1995, 3% had been vaccinated prior to illness.

Although influenza A virus infections can affect persons of any age, certain age groups may be more susceptible to selected strains and/or subtypes of virus. Historically, influenza A (H3N2) infections are particularly severe in the unvaccinated elderly, but are most common in children. Influenza A (H1N1) infections tend to affect persons in the age range of 20 to 40 years. Figure 3 compares the age distribution of patients with confirmed influenza A identified from IRC- and TDH-based surveillance in 1995. These profiles appear similar to the 1994 age distributions of patients with influenza **A** virus infections. IRC-based surveillance targets pediatric age groups. TDH-based surveillance targets a wider age range of patients.

In December 1995, TDH epidemiologists were aware that influenza-like illness (ILI) was sweeping through elementary and junior schools in a number of school districts around the state. Particularly hard hit were the schools in Scurry and Wood Counties. Influenza A viruses of both subtypes were isolated from children and adults in Scurry County during that time.

Figure 3. Age Distribution of Patients with Confirmed Influenza A: Harris County and TDH Surveillance Compared



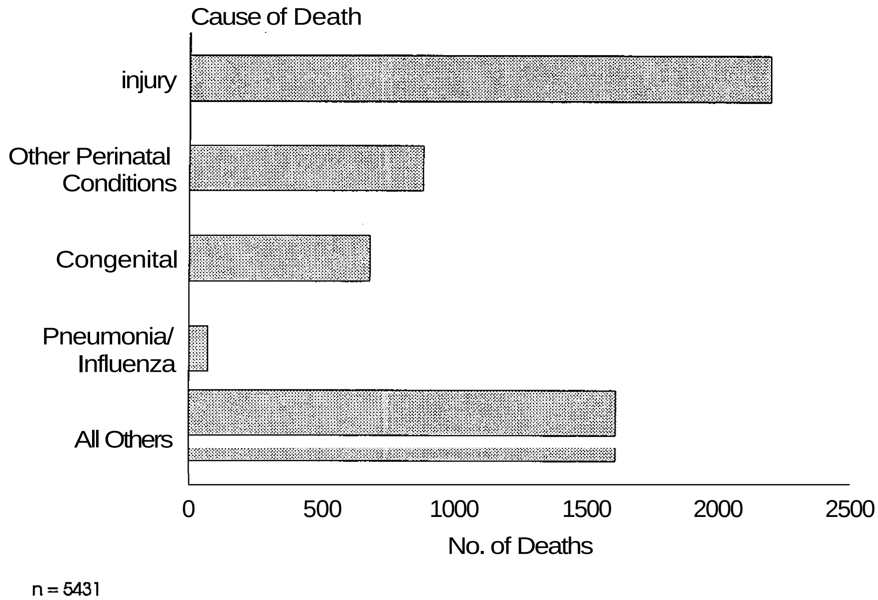
The Texas Department of Health wishes to acknowledge W. Paul Glezen, MD, Medical Epidemiologist for the *Baylor* College of Medicine *Influenza* Research Center, for his continued contribution of Houston surveillance data.

Infectious Disease Epidemiology and Surveillance Division *(512) 458-7676*

Injury Mortality Among Children and Young Adults

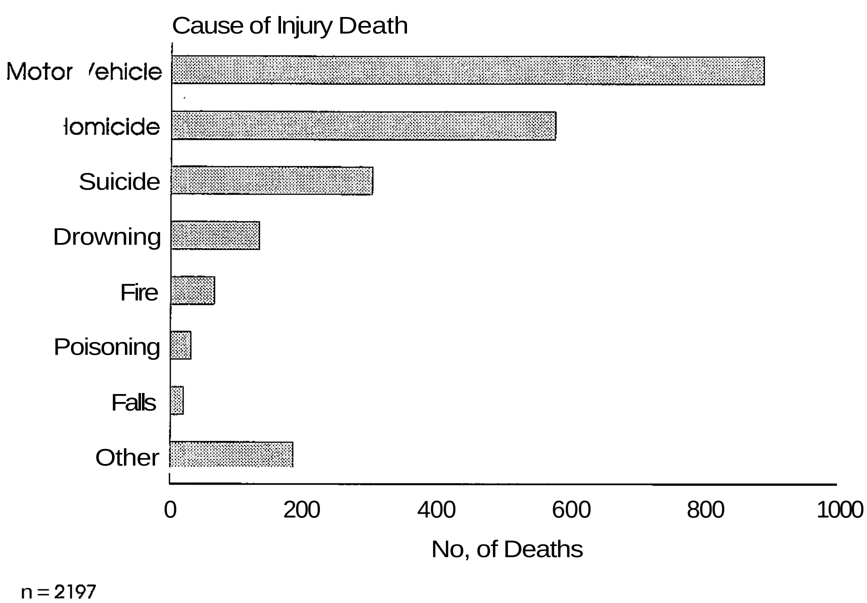
In 1994, 5,431 young people under the age of 22 years died in Texas. Injury was the leading cause of death among the 6.2 million Texans in this age group (40%). In 1994 injury claimed more lives in this age group (2,197) than did "other perinatal conditions" (881), congenital causes (672), or pneumonia/ influenza (70) (Figure 1).

Figure 1. Leading Causes of Childhood and Young Adult Death, 1994



Sixty percent (1319/2197) of the injury deaths were unintentional (eg, motor vehicle, fall, drowning) and 40% (878/2197) were intentional (eg, homicide, suicide). The leading causes of injury death were motor vehicle (885), homicide (575), suicide (303), drowning (133), fire (66), poisoning (31), and falls (19) (Figure 2).

Figure 2. Leading Causes of Childhood and Young Adult Injury Death, 1994



As Table 1 illustrates for those under 20 years of age, causes of injury death (unintentional and intentional combined) varied by age. Motor vehicles were the leading cause of injury death in each age group. Among children younger than 5 years, homicide and drowning were the second and third leading cause of injury death, respectively. For children aged 5 to 9 years, drowning was the second leading cause of injury death, followed by fire and "other" causes. Homicide and suicide were the second and third leading causes of injury death for persons aged 10 to 14 and 15 to 19 years.

More years of productive life are lost to injury than to any disease. In 1994, for persons aged 1 to 21 years, injury (unintentional and intentional combined) was responsible for 104,406 years of productive life lost: more than cancer (13,054) or infectious and parasitic diseases (5,324).

Table 1. Causes of Childhood and Young Adult Injury Deaths, 1994

Age	(%) 0-4 Years	(%) 5-9 Years	(%) 10-14 Years	(%) 15-19 Years
Motor Vehicle	33%	59%	38%	40%
Suffocation	11%	6%	1%	0.3%
Fire	13%	7%	1.6%	0.6%
Drowning	15%	15%	9%	3%
Homicide	16%	6%	20%	32%
Unintentional Firearms	0.9%	0%	5%	3%
Suicide	0%	0%	18%	17%
Other Causes	11.1%	7%	7.4%	4.1%
Total Deaths	346	142	190	1007

n=1685

Injuy Prevention and Control Program
(512) 458-7266

Leishmaniasis: Report of a Case from North Texas

In April 1995, a dermatopathologist in Dallas identified *Leishmania* parasites in a skin biopsy specimen submitted from Albany. This represents the 26th case of cutaneous leishmaniasis acquired in Texas since 1946; it occurred 75 miles north of the locations of any previous cases.

The patient was an 8-year-old boy from Albany who had never traveled outside of Texas. He first noticed a small "pimple," in the midline of his neck over the Adam's apple, in late November 1994. The lesion was not painful and did not itch. It would often crust over, then peel without bleeding on a biweekly schedule. The family thought the lesion was growing very slowly over time and treated it with topical over-the-counter creams. They first sought medical attention in early March 1995; a steroid cream was prescribed without effect. On March 22 they sought a second opinion because the lesion would not heal. The lesion was removed completely by shave excision and sent to a Dallas laboratory for analysis. At this time the diagnosis of leishmaniasis was made by visualization of amastigotes on Wright and Giemsa stained smears of the biopsy tissue. Because the lesion was totally removed by the excision, no treatment was started; the child has had no recurrence.

The family lives on a 7-acre plot near a city park; much of the surrounding land is overgrown. Although the family had not traveled outside Shackelford County during several months prior to the lesion's appearance in November, they often went camping in wooded areas near their home. No other family members were clinically affected, and neither of the family's 2 dogs appeared ill.

On two occasions, rodent and insect traps were set on and around the family's property. Several wood rats were trapped, but none were positive by PCR or culture for leishmaniasis. Also, a phlebotamine sandfly was trapped and dissected in the field, but did not contain any parasites by direct observation. Finally, serum samples from the 3 other family members and the 2 pet dogs were negative for leishmaniasis by indirect fluorescent antibody assay.

Cutaneous leishrnaniasis in Texas is caused by the parasite *Leishmania mexicana.* The more serious form, visceral leishmaniasis, is not endemic to Texas. *Leishmania* is transmitted to humans from its mammalian host, the wood rat (*N. micropus*) by the bite of the phlebotamine sandfly *(L. diabolica).*

Texas is the only state in the US that has an endemic focus of cutaneous *Leishmaniasis.* This case greatly expands the northern border of the endemic area, which had been thought to be centered south of San Antonio. Physicians and other health care providers should be alert to this phenomenon and consider cutaneous *leishmania* in the differential diagnosis of small cutaneous nonhealing lesions.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

Lyme Disease

Of the 183 possible cases of Lyme disease reported to the Texas Department of Health in 1995, 77 (42%) met the CDC's current case definition: physician-diagnosed erythema migrans (EM) at least 5 cm in diameter or rheumatologic, cardiac, or neurologic manifestations with a positive laboratory test. Twenty-seven (35%) of the 77 patients were male; 50 (65%) were female. Ages ranged from 20 months to 85 years. Eleven persons were hospitalized. Twenty (26%) of the 77 patients recalled tick exposure prior to onset of their illness; 1 reported only flea bites prior to onset.

Twenty (26%) of the 77 patients had physician-diagnosed EM. Twelve of these 20 had multiple lesions. (EM was reported for an additional 10 patients, but the lesions were not witnessed by a physician.) Lesions were most commonly found on the trunk or on the legs. Reported months of onset of EM were January, February, March, and April (1 each); May and June (4 each); July (5); and September (2).

Bell's palsy was reported for 8 (10%) patients; unilateral Bell's palsy was reported for 6 patients and bilateral Bell's palsy was reported for 2 patients. Other commonly reported neurologic manifestations included peripheral neuropathies (reported for 36 patients), limb weakness (21 patients), and sensory impairment (18 patients). Twenty-six (34%) patients had migratory joint pain; 31 (40%) had arthritis/swollen joints. The knees were often affected.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

Malaria

Eighty-nine malaria infections were reported in 1995, representing a slight decrease from the 93 reported in 1994. There were 88 imported cases and one congenital infection. Two patients died of malaria acquired outside the United States.

Of the imported cases, 67 (76%) were in males and 21 were in females. Forty-six (52%) patients were black (the overwhelming majority of whom were African or the US born children of Africans), 17 were white, 15 were Asian/Pacific Islanders, and 11 were Hispanic. Age was known for 85 patients and ranged from 1 through 67 years, with a median age of 36. Age distribution varied among ethnic groups: white case/patients had a median age of 47; Asians, 42; blacks, 34; and Hispanics, 27. Of the 10 patients less than 10 years old, 7 were black, and 3 were Hispanic.

Four species of Plasmodium (P. *falciparum*, P. vivax, P. *malariae*, and P. ovale) infect humans. Among the imported cases, 37 were due to P. falciparum, 36 to P. vivax, 3 to P. *malariae*, and 1 to P. ovale. Two mixed-species infections were recognized; P. *falciparum*/P. *malariae* from Nigeria, and P. *falciparum*/P. vivax from an individual who had been in Morocco, India and the "Middle East." The Plasmodium species was not reported for 9 patients (10%).

Fifty patients (57%) had been in Africa prior to onset of malaria; as has been the situation in recent years, Nigeria, with 34 cases, was the country most often implicated as the source of infection. Other African countries where malaria was acquired included: Kenya (5), Ghana (4), Zaire (2), and Angola, Guinea, Ivory Coast, Morocco, and "West Africa" (1 each). One of the patients who had been in Nigeria was also in Kenya, and the patient who had been in Morocco was also in India and the "Middle East." Asian/Pacific Island countries where malaria infections were acquired included: India (10); Pakistan and Saudi Arabia (2); and New Guinea, Pakistan, and Viet Nam (1 each). Latin American countries where malaria infections were acquired included: Honduras (7), Ecuador (2), Guyana (2), and "Central America," Costa Rica, El Salvador, and Nicaragua (1 each). Among the 8 patients for whom no potential source country was reported, 2 each were Asian, black, Hispanic, and white.

The congenital case was recognized in a 26-day-old infant, born in Houston to a Nigerian woman. The mother reported a febrile illness while visiting in Nigeria during her sixth month of pregnancy, but she was smear-negative at the time of the infant's hospitalization. Initially read as P. vivax, the infant's infection was confirmed as P. falciparum. Both infant and mother were first treated with chloroquine phosphate (appropriate for P. vivax), then with quinine and sulfadoxine and pyrimethamine (Fansidar) after P. *falciparum* was diagnosed. The mother was undoubtedly the source of the infant's infection, but her case was not reported as malaria, which requires a blood smear positive for Plasmodium species. Very low to undetectable levels of parasitemia may occur in persons with long-standing malaria infection. In these individuals, serology for antibodies to Plasmodium species may be a more appropriate laboratory test.

Two patients died; both had been infected with P. *falciparum*, the species that causes the most severe symptoms and is most often recognized in fatal infections. Both of the deceased were male. The first was a 39-year-old resident of Dallas County who was born in Kenya. He had recently returned to Dallas following a 3-month stay in Kenya when symptoms of malaria prompted his hospitalization. The death certificate listed adult respiratory distress syndrome and acute renal failure due to falciparum malaria. The second malaria fatality occurred in a Texas-born, 67-year-old white Liberty County resident.

He was a retired minister/missionary who had recently returned from Guinea, West Africa, prior to onset of malaria. His death certificate listed multisystem organ failure, acute renal failure, disseminated coagulopathy, and cerebral malaria. No information was available for either case-patient regarding the use of malaria chemoprophylaxis.

Limited data are available regarding malaria chemoprophylaxis for malaria patients in Texas. Fifty percent (44) of case reports specifically indicated that the patient had not used any malaria chemoprophylaxis. Many of these patients may have been nonresidents who came to Texas already infected, rather than US residents returning from malarious areas. Fifteen cases specifically reported use of malaria chemoprophylaxis, but in 8 of these cases, an inappropriate drug (chloroquine phosphate in areas with chloroquine-resistant malaria) was used. In 5 cases the patient reportedly used an appropriate drug (either chloroquine phosphate in areas with chloroquine-sensitive malaria or mefloquine in areas with chloroquine-resistant malaria). These 5 cases suggest that drug resistance has spread to areas currently thought to be chloroquine or mefloquine-sensitive and could support current speculation that mefloquine resistance is much more widespread, especially in Africa, than generally recognized. While not 100% effective in preventing malaria infection, the use of appropriate antimalarial chemoprophylaxis, supplemented by effective insect repellents and other mosquito/insect-avoidance efforts is strongly recommended for travelers to the malarious areas of Africa, Asia and Latin America.

*Infectious Disease Epidemiology and Surveillance Division (512)***458-7676**

Measles

Measles morbidity in Texas in 1995 was Limited to 14 cases resulting from 2 distinct outbreaks--one in Andrews (4 cases), the other in San Antonio (10 cases). Two of the Andrews cases were imported into Texas from Germany. All remaining cases in both cities were classified as indigenous.

Andrews Outbreak

Public health officials first learned of a suspected case of measles in Andrews on August 22,1995. A 13-month-old child from Andrews County (population14,000) developed a rash on August 18 that started on her face, then spread to her trunk and extremities. A diagnosis of "antibiotic reaction" was made twice (on August 18 and August 20) before a third doctor saw the child on August *22,* reviewed her immunization record, and noted that the child had never received measles-mumps-rubella vaccine. This physician immediately diagnosed measles and reported the case to the Andrews City-County Health Department. During case investigation, it was learned that this child's father also had been ill and had been hospitalized with similar symptoms which developed on August 17. Both cases were serologically confirmed as measles by the Texas Department of Health Bureau of Laboratories.

The case investigation revealed that the patients were exposed to measles on August 4 in a local physician's waiting room. This physician confirmed that on August 4 he had seen a seriously ill 35-year-old German man with a high fever and a very bright, red rash and had diagnosed measles. This patient was traveling in Texas with his wife and two children and had become ill with fever, chills, coryza, and lymphadenopathy on August 1. His symptoms became worse, and he broke out in a rash on August 3. The case was not, however, reported to the Andrews City-County Health Department.

Interviews conducted after the German travelers returned to Europe revealed that their trip to the US had been delayed when their 9-year-old daughter became ill on July 18 with a fever and rash. It was also learned that their 12-year-old son had arrived in Texas with a noticeable cough, developed fever and a rash around August 3, and spent most of his time in Texas sick in bed. His rash illness was classified as an imported case of measles because the signs and symptoms met the case definition. The case was epidemiologically linked to a laboratory confirmed case of measles; onset of illness occurred in Texas. The daughter's illness, which appeared to be measles but was not diagnosed as such, was considered a German case since onset occurred prior to her arrival in Texas.

San Antonio Outbreak

Ten cases of measles occurred in San Antonio between September 7,1995 and November 12, 1995. Four of the patients were adults in their early 30s; all the others were infants who ranged from 14 months to 18 months of age. The index case was a 33-year-old man whose only travel outside the San Antonio area during his exposure period was a 2-day business trip to the Dallas-Fort Worth area; his rash onset was reported as September **7.** On September 18, this man's 16-month-old, unvaccinated son came down with measles. This child subsequently spread measles to 3 other unvaccinated children in child-care facilities they attended; these children were 14 months, 15 months, and 16 months of age. One of these children passed the infection on to his 33-year-old mother, whose rash onset occurred on October 16. The additional 4 cases that occurred in San Antonio could not be directly linked to this cluster.

A measles virus isolated from one of the adult cases was determined by the Centers for Disease Control and Prevention to resemble most closely a strain of measles last identified in the Netherlands.

Immunization Division (800) 252-9152

Mumps

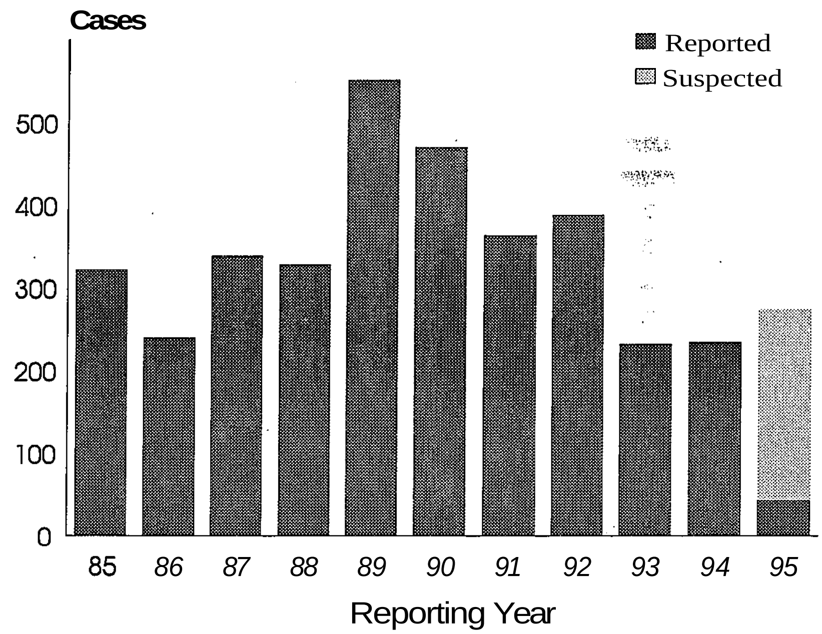
Late in 1994, the Immunization Division learned that Texas was 1 of only 4 states nationwide reporting more than 200 cases of mumps annually. During the period 1985-1994, the number of cases in Texas ranged from 231 in 1993 to 551 in 1989. A review of supplemental data available on 27% (63/231) of Texas cases in 1993 and on 61% (144/234) in 1994 showed that a disappointingly small percentage of mumps cases were confirmed by appropriate laboratory testing (only 10% in 1993 and 8% in 1994). Furthermore, most (85% in 1993 and 74% in 1994) of these individuals had been previously vaccinated against mumps.

Intensive efforts to obtain additional epidemiologic data on all suspected cases began in January 1995 to find out why mumps morbidity in Texas was consistently higher than that of other states. These efforts included encouraging the confirmation of all mumps diagnoses through appropriate laboratory testing. Surveillance protocols were developed by the Immunization Division and distributed to all public health departments throughout the state and to private health practitioners as they reported cases.

Local and regional health department personnel and physicians in private practice played a key role in the expanded surveillance of mumps in 1995. Many hours were spent gathering additional details about suspected cases, obtaining vaccine histories, and collecting specimens for laboratory testing. The result was an 82% decrease in the number of cases reported to CDC from Texas in 1995.

Throughout 1995, 273 suspected cases of mumps were reported to TDH. Although this number was somewhat higher than had been reported in 1994, the figure was consistent with that of previous years (see Figure 1). Again in 1995, 80% of these individuals had been vaccinated against mumps. Supplemental epidemiologic data were available on 95% of all suspected cases reported in 1995; only 43 of these were determined to be mumps, including 24 that were laboratory confirmed and 10 that were epi-linked to laboratory-confirmed cases.

Figure 1. Reported Cases of Mumps, 1985-1995



Our experience in Texas in 1995 suggests that mumps has been over-reported in previous years. Before 1995, a clinical diagnosis of mumps was accepted as morbidity without additional epidemiologic data and without confirmatory laboratory testing. Mumps is difficult to diagnose through clinical signs and symptoms alone. Mumps-specific laboratory testing is recommended on **all** suspected cases.

Immunization Division (800) 252-9152

Oak Park, Corpus Christi Refineries Site Investigation

The Oak Park neighborhood is a residential area of Corpus Christi surrounded by heavy refining and chemical production industry. Numerous explosions, fires, and hazardous substance spills have occurred near Oak Park residents' homes. Although available soil, air, and drinking water sampling data for Oak Park do not indicate a public health hazard based on current environmental guidelines, the proximity of residences to industrial sites and accidents has contributed to considerable environmental and health concerns among the residents.

In April 1993, the Texas Natural Resource Conservation Commission (TNRCC) contacted the Texas Department of Health (TDH) for assistance in addressing Oak Park residents' health and environmental concerns. To better assess the needs of the community, TDH began documenting,Oak Park residents' health, environmental and safety concerns, and then conducted door-to-door interviews with Oak Park residents. The questionnaire was divided into two sections: household demographics and concerns, and individual concerns. Results of the questionnaire follow.

Table 1. Standardized Prevalence Ratios for Selected Health Conditions

Health Condition	Observed No.	Expected No.[1]	Standardized Prevalence Ratio (SPR)[2]	95% Confidence Interval
Trouble with dry/itchy skin	262	10.6	24.7	(21.8 - 27.9)
Dermatitis, rashes or other skin trouble	187	17.5	10.7	(9.2 - 12.3)
Ulcer (GI)	38	9.1	4.2	(3.0 - 5.7)
Frequent indigestion	166	11.7	14.2	(12.1 - 16.5)
Asthma	69	21.7	3.2	(2.5 - 4.0)
Emphysema	11	5.2	2.1	(1.1 - 3.8)
Migraine headaches	111	18.2	6.1	(5.0 - 7.3)
Anemia of any kind	50	7.7	6.5	(4.8 - 8.6)
Tinnitus or ringing in the ears	147	16.3	9.0	(7.6 - 10.6)
Diabetes	52	14.7	3.5	(2.6 - 4.6)
Goiter or other thyroid trouble	24	7.3	3.3	(2.1 - 4.9)
Hypertension or high blood pressure	115	62.0	1.9	(1.5 - 2.2)

[1] Adjusted for the age distribution of Oak Park residents. Expected numbers are based on rates from the 1990 National Health Interview Survey.
[2] All SPRs in the table above are significantly higher at the 5% level than expected.

In 202 Oak Park households, 622 self-administered questionnaires were completed (82% of the 245 Oak Park households). Only 506 individuals in 164 households, however, completed the entire questionnaire.

Oak Park residents were particularly concerned about environmental hazards from explosions, fires and chemical spills in the community; safety issues regarding emergency and evacuation procedures; petrochemical odors; and various health conditions or problems.

The health section of the survey was designed to identify individuals' particular health conditions by body system. The health conditions were grouped by

- skin conditions
- gastrointestinal/urinary tract conditions
- respiratory conditions
- central nervous system conditions
- other health problems

Residents were asked to indicate whether or not they had experienced any of the listed health problems within the past year, and whether or not they had seen a physician for that problem. Examples of specific health conditions are listed in Table 1.

Standardized prevalence ratios were calculated for the reported health conditions (Table 1). The numbers of people who reported the listed health problems during the Oak Park interviews were greater than that which we would expect when compared to the 1990 National Health Interview Survey.

Asthma

One area of particular concern was the number of individuals in Oak Park reporting asthma. The reported frequency of asthma in Oak Park was **3** times greater than the national average. Based on these results, the kinds of exposures found in the area, and scientific evidence of an association between such exposures and asthma, staff further investigated asthmatic conditions.

To confirm asthmatic conditions, patient medical records were reviewed. Fourteen medical records were received, lending a **23.7%** response rate when compared with the 59 individuals who reported "seeing a physician" for their condition. Nine of the 59 (15.2%) individuals who reported "seeing a physician" for their condition were confirmed as asthmatic. Due to such low response rates, staff could not determine if the collected information lended reliable results of the actual asthma problem in Oak Park residents. In addition, national "physician-diagnosed" rates of asthmatic conditions are lacking, rendering the standardized comparison with Oak Park rates impossible. Based on such limitations, further examination of reported health conditions is not expected at this time.

TDH staff are continuing to work with residents in investigating their health and environmental concerns, as well as monitoring cancer incidence and mortality in this area. They are also collaborating with the TNRCC in evaluating environmental data from this area.

Noncommunicable Disease Epidemiology and Toxicology Division (512) 458-7222

Primary Amebic Meningoencephalitis

Primary amebic meningoencephalitis (PAM) is a fulminant, purulent infection of the grey matter of the brain. The causative organism, Naegleria fowleri, is a ubiquitous, free-living ameba that thrives in warm, fresh water, particularly if it is stagnant or slow moving. The disease is characterized by fever, headache, vomiting, signs of meningeal irritation and encephalitis with rapid progression to coma and death. Reported cases have occurred primarily in young boys and in adolescent males and females. Prior to 1995 the highest number of PAM cases reported in a single year in Texas was 2. In 1995, 5 PAM cases were reported.

The 5 patients ranged in age from 4 through 11 years. Four were boys. Onsets of illness occurred in July through September. All 5 patients had a history of swimming in natural bodies of water during the week prior to onset of illness. The period of time from swimming to onset of illness ranged from 1 to 5 days. The patients resided in 5 counties throughout Texas. All 5 patients died. The duration of illness ranged from 4 through 7 days; 3 died on their fourth day of illness.

All 5 patients had an elevated white blood count with a left shift. The CSF demonstrated a pleocytosis, with over 2,000 cells per cubic centimeter in 3 patients and a predominance of polymorphonuclear cells. The CSF glucose level was <40 mg/dL and the CSF protein level was >250 mg/dL for all patients. Amebae were observed in the cerebrospinal fluid (CSF) or brain tissue of all 5 patients.

PAM is a relatively rare disease in Texas and the United States. The occurrence of 5 cases in Texas in 1995 may reflect an actual increase in the number of cases, better reporting of cases, or improved recognition and diagnosis of patients. PAM is usually associated with swimming in warm, stagnant water. Elevated swimming water temperature or stagnant water conditions are unlikely to be the cause for the increase since weather conditions in Texas in the summer of 1995 were similar to those of previous summers.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

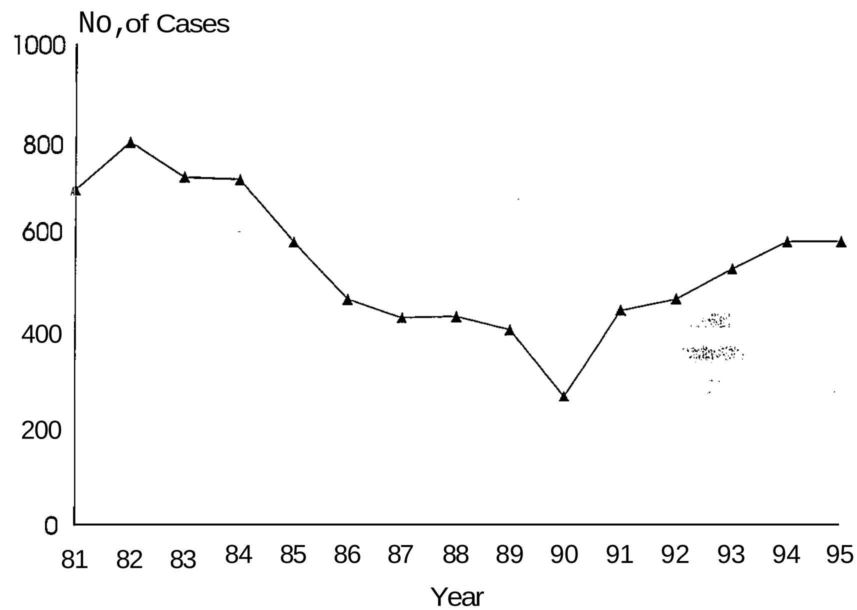
Rabies in Animals

Rabies is a viral zoonosis affecting the central nervous system. The mode of transmission is by saliva containing rabies virus being introduced into an opening in the skin or through mucous membranes, usually via the bite of a rabid animal. Animals considered to be high risk for transmitting rabies in Texas include foxes, bats, coyotes, skunks, and raccoons.

In 1995, 590 (4%) of 13,814 animal specimens tested by the Texas Department of Health were confirmed positive for rabies. This is the same number of positive specimens reported in 1994 and is the highest yearly total for Texas since 1984 (Figure 1). Rabies in wild or domestic animals occurred in 119 of the 254 Texas counties in 1995 (Figure 2).

Rabies in wildlife accounted for 80% of the cases throughout the state. Foxes were the primary reservoir in 1994 (24% of all positive cases) and in 1995 (23% of all positive cases). During 1995, 137 foxes tested positive for rabies compared with 144 in 1994. Of all foxes tested for rabies, 43% tested positive in 1995 versus 52% in 1994. Bats have been responsible for the second highest number of rabies cases in a species since 1993. During 1995, 123 bats were positive for rabies compared with 94 in 1994. Of all bats tested for rabies, 13% were positive in both 1995 and 1994.

Figure 1. Confirmed Cases of Animal Rabies: 1981-1995



Rabies in domestic animals (20% of the positive cases) continues to be a serious concern because rabid domestic animals are 5 to 10 times more likely to come into contact with humans than are rabid wildlife. Tables 1 and 2 compare the numbers of domestic and wildlife rabies cases, respec-

Table 1. Confirmed Cases of Rabies in Domestic Animal Species: 1994 and 1995

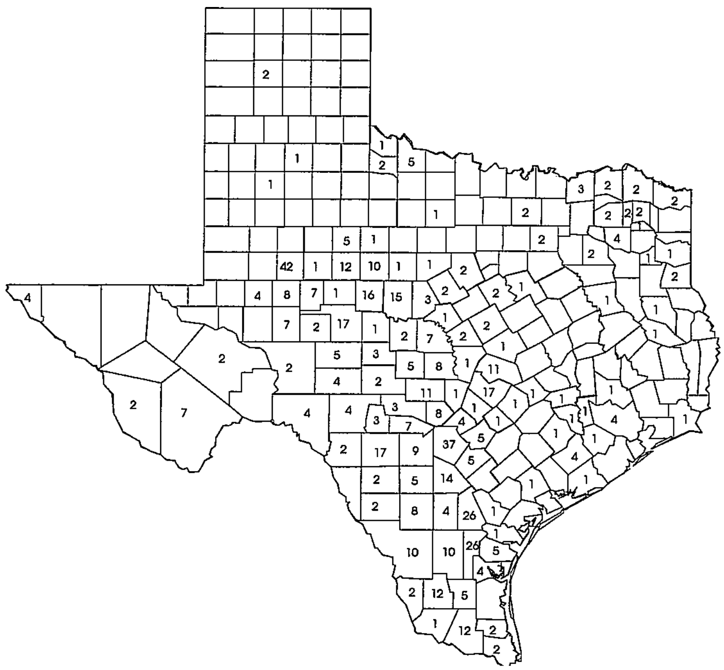
Species	1994	1995
Dogs	53	55
Cats	27	25
Cows	21	23
Horses	7	6
Goats	10	9
Sheep	2	1
Rabbit	1	0
Total	**121**	**119**

Table 2. Confirmed Cases of Rabies in Wild Animal Species: 1994 and 1995

Species	1994	1995
Skunks	78	69
Bats	94	123
Foxes	144	137
Coyotes	77	80
Raccoons	68	41
Other	8	21
Total	**469**	**471**

tively, for the various animal species for 1994 and 1995. In 1995, the highest number of cases occurred in February and March, with foxes being the predominant rabid species.

Figure 2. Confirmed Cases of Animal Rabies (all species) by County



The gray fox rabies epizootic, which began in 1988 in West Texas, expanded in a northeasterly direction with the addition of 11 counties that did not have previously recorded cases of the gray fox strain of rabies virus. Howard (42 cases) and Bexar (37 cases) Counties, both located in this epizootic area, had the highest number of rabies cases per county statewide. There continued to be considerable spillover of the gray fox strain into the raccoon population; the number of rabid raccoons statewide was 41 in 1995 and 68 in 1994.

The South Texas canine rabies epizootic, which also began in 1988, continued to expand northward during 1995; 75 coyotes and 36 dogs tested positive for rabies in the epizootic area. Ninety-four percent of all rabid coyotes reported and 65% of all rabid dogs reported were from the following 18 South Texas counties: Atascosa, Brooks, Dimmit, Duval, Frio, Hidalgo, Jim Hogg, Jim Wells, Kleberg, La Salle, Live Oak, McMullen, Nueces, Starr, Webb, Willacy, Zapata, and Zavala.

In response to the epizootics, the Oral Rabies Vaccination Programs (ORVP) for coyotes in South Texas and gray foxes in West-Central Texas have been initiated. The goals of the ORVP are to create zones of vaccinated coyotes and foxes along the leading edges of the epizootics; in the 1995 ORVP for coyotes, the area in which the program was implemented included the northernmost 40-mile-wide band of the epizootic. These programs target wild animals because they are the primary reservoirs for rabies. Immunization is accomplished by aerial distribution of a bait containing oral rabies vaccine. The success of the 1995 ORVP for coyotes has been measured through epidemiologic and statistical methods for the evaluation period. The northward expansion of the epizootic has been halted. Although the incidence of canine rabies cases in South Texas increased (122 cases in 1994 versus 142 cases in 1995), 38% of the cases occurred in the leading 40-mile-wide band of the epizootic in 1994 compared with 12% in 1995. The number of cases per 10,000 square miles in the band was lower than predicted by regression analysis (42 predicted cases versus 6 actual cases).

Zoonosis Control Division (512) 458-7255

Retrospective Immunization Survey

The Texas Department of Health (TDH) conducts the Texas Retrospective Immunization Survey (TRIS) annually to assess the immunization levels of public school kindergarten enterers at the time they were 24 months of age. By providing trend information on childhood immunization levels, the TRIS is a useful tool for monitoring progress in the immunization coverage levels of preschool-age children. For the purposes of this survey, a child is considered adequately immunized at 24 months of age if he or she has received at least 4 doses of diphtheria and tetanus toxoids and pertussis vaccine (DTP), 3 doses of oral poliomyelitis vaccine (OPV), and 1 dose of measles, mumps, and rubella vaccine (MMR). This series of vaccines is also referred to as the 4-3-1 schedule. Hepatitis B vaccine (HBV) and *Haemophilus influenzae* type b conjugate vaccine (HibCV) are not included in this survey.

The TRIS offers several advantages over other immunization survey methodologies. Although kindergarten attendance is not mandatory in Texas, there is almost universal voluntary participation. An estimated 96% of the 1989 Texas birth cohort entered kindergarten in 1994-95. All socioeconomic groups are represented in this population-based survey. Bias due to parental recall is minimized by the legal requirement that schools collect and maintain written, date-specific childhood immunization records for each student. The centralized location of these records means that large samples can be undertaken at little cost, increasing the validity and reliability of the survey coverage level estimates.

The primary disadvantage with retrospective surveys in general derives from the fact that the data generated do not reflect the current condition in the general population. TRIS data reflect the immunization levels of the current kindergarten enterer cohort at 24 months of age (3 years prior to the survey date) rather than the levels of the current 24month-old cohort.

The CDC 2-stage cluster survey method was used to randomly select 35 schools per Public Health Region (PHR) (stage 1) and 25 students per school (stage 2) in each of the 11 PHRs [1]. The probability of a given school's selection for the survey is proportionate to its share of the regional kindergarten population. Three hundred and eighty-five of 3,268 kindergartens statewide participated in the 1995 TRIS. The immunization histories of 9,544 children were reviewed, yielding a 99.2% (9,544/9,625) completion rate. The sample fell short of the expected 9,625 due to undersampling and because several schools chosen had fewer than 25 kindergarten students.

Table 1 shows the 1995 TRIS results for the percent of kindergarten students up to date by 24 months by vaccine category. Each coverage level estimate is accompanied by a 95% confidence interval. Regional coverage levels for the 4-3-1 series at 24 months of age ranged from a low of 29.5% (95% C.I. 25.2-33.8) in PHR 5 to a high of 52.5% (95% C.I. 48.7-56.2) in PHR 10. State coverage levels were calculated by weighting each PHR's immunization level by that region's proportion of the state kindergarten population, as indicated by Texas Education Agency data. Comparison of 1994 and 1995 TRIS coverage levels for the 4-3-1 series showed a decline of 1.8 percentage points. The overlapping confidence intervals, however, indicated that the observed decline was not statistically significant.

Importantly, there was a 22.2 percentage point decrease from the 3-3-1 level (64.0%) to the 4-3-1 level (41.8%) at 24 months of age. Additional analyses (not shown) of the 1995 TRIS data revealed a number of shortcomings in state immunization practices. Although 96.2% (8837/9544) of the histories contained a fourth DPT vaccination, 51% (4504/8837) indicated administration at or after 25 months of age. This is significantly later than recommended by the Advisory Committee on Immunization Practices (ACIP). Examination of trends in vaccination levels by selected ages and vaccine categories reaffirms the impression that preschool-age children are not receiving vaccines according to the recommended immunization schedule. Additional analyses showed that simultaneous administration of the fourth DTP and the first MMR (as recommended by ACIP) occured only 21% of the time. Substantial missed opportunities for simultaneous administration contributed to the lag in the 4-3-1 coverage levels at 24 months of age, increasing the financial burden of immunization to parents, fostering client dropout, and contributing to the number of under-immunized children statewide.

Table 2 compares the 1995 TRIS immunization coverage levels with recent immunization survey results from the 1994 TDH Household Survey (TDHHS)[2] and the National Immunization Survey, conducted by the Centers for Disease Control and Prevention (CDC/NIS)[3]. These surveys use different age group and vaccine series criteria than does the TRIS. To provide a basis for comparison, the 1995 TRIS and the data gathered by TDH clinic assessments program (CASA) were reanalyzed using the 1994 TDHHS criteria for age group and vaccine series. TRIS and CASA data were also analyzed at the 35-month age marker for comparison with the April-December, 1994, CDC/NIS results. The large sample sizes of the 1995 TRIS and CASA datasets are reflected in the tightness of the confidence intervals. It should be noted that, in many instances, confidence intervals for a given age group and vaccine series overlap when comparing results from these different surveys. Also, the significance of differences among survey results should be interpreted with caution since they represent different cohorts. The unweighted 1995 TRIS 4-3-1 coverage level of 45.7% (95% C.I. 44.7- 46.7) at 24 months was the highest of the three survey results evaluated at that age marker. At the 35-month age marker, the recent CDC/NIS coverage level of 71.0% (95%C.I 66.7-75.3) for the 4-3-1 series demonstrated a statistically significant increase over the 1995 TRIS level of 59.9% (95% C.I 58.9-60.9). This finding suggests that greater standardization of measurement criteria would be an important contribution to the comparability of future evaluations.

Immunization Division (800) 252-9152

References:

1. Zell E, Eddins D. Guidelines for retrospective school enterers' survey and clinic assessment, p. 62.
2. Simpson D, Suarez, L. The Immunization Status of Texas Children Age 3-24 Months: Results of the 1994 Texas Immunization Survey. Accepted for publication in Texas Medicine.
3. CDC. State and National Vaccination Coverage Levels Among Children Aged 19-35 Months, United States, April-December 1994. MMWR 1995:44(33).

Table 1. TRIS Immunization Levels by PHR and Vaccine Category

PHR	4-3-1 (%)	(95% C.I.)	3-3-1 (%)	(95% C.I.)	4 DTP (%)	(95% C.I.)	3 DTP (%)	(95% C.I.)	3 OPV (%)	(95% C.I.)	1 MMR (%)	(95% C.I.)
1	45.9	(41.4-50.4)	65.3	(61.0-69.6)	46.5	(41.9-51.1)	78.2	(74.3-82.2)	72.5	(68.1-77.0)	78.6	(75.7-81.5)
2	44.2	(39.9-48.6)	69.1	(64.7-73.5)	45.6	(41.3-50.0)	82.0	(78.5-85.5)	76.0	(71.9-80.2)	80.6	(77.5-83.8)
3	43.4	(38.1-48.8)	60.6	(56.4-64.7)	46.1	(40.8-51.4)	75.7	(72.0-79.5)	67.9	(63.8-72.0)	76.3	(72.8-79.8)
4	37.9	(34.2-41.7)	56.7	(52.9-60.5)**	39.2	(35.4-43.0)	73.9	(70.5-77.4)	63.9	(60.3-67.5)**	74.5	(71.1-78.0)
5	29.5	(25.2-33.8)**	50.1	(44.5-55.6)**	36.1	(32.4-39.9)**	69.8	(67.1-72.5)**	64.3	(61.3-67.4)**	62.1	(55.8-68.4)**
6	34.9	(28.3-41.5)	60.3	(56.6-64.1)	39.1	(31.9-46.2)	77.1	(72.9-81.4)	71.0	(66.8-75.2)	71.8	(68.9-74.6)
7	49.7	(44.1-55.4)	68.1	(63.5-72.7)	53.0	(47.5-58.5)	80.6	(77.0-84.1)	77.5	(73.5-81.5)	77.7	(74.1-81.4)
8	43.9	(36.8-51.0)	73.4	(69.6-77.3)*	45.9	(38.5-53.3)	83.3	(79.7-86.8)	82.4	(78.7-86.2)*	80.1	(77.0-83.2)
9	46.9	(42.5-51.3)	66.7	(63.1-70.4)	48.8	(44.6-53.0)	79.3	(76.3-82.4)	74.7	(71.3-78.2)	77.4	(74.3-80.4)
10	52.5	(48.7-56.2)*	74.6	(71.7-77.6)*	57.3	(53.0-61.5)*	86.7	(84.0-89.5)*	86.4	(83.5-89.3)*	81.9	(79.0-84.9)*
11	42.1	(38.4-45.8)	67.8	(64.1-71.4)	44.9	(41.2-48.6)	80.3	(77.4-83.3)	79.1	(76.0-82.1)	74.4	(70.7-78.1)
TOTAL†	41.8	(37.9-45.7)	64.0	(61.2-66.8)	44.9	(40.9-48.9)	78.3	(75.7-80.9)	73.3	(70.5-76.1)	75.5	(73.1-77.9)

† Weighted state levels
* Significantly higher than statewide levels.
** Significantly lower than statewide levels.

Table 2. A Comparison of Recent Immunization Survey Results*

AGE GROUP (age in days)	SERIES	1995 TRIS	(95% C.I.)	CDC/ N.I.S.	(95% C.I.)	1994 TDHHHS	(95% C.I).	CASA	(95% C.I.)
3-4 MO. (152 days)	1 DTP, 1 POLIO	77.2%	(76.3-78.0)	---	---	83.0%	(74.7-91.6)	77.5%	(77.1-77.8)
5-6 MO. (213 days)	2 DTP, 2 POLIO	63.9	(62.9-64.9)	---	---	59.7	(51.0-68.5)	60.3	(59.8-60.7)
7-15 MO. (487 days)	3 DTP, 2 POLIO	68.4	(67.5-69.3)	---	---	64.0	(59.3-68.8)	62.4	(61.9-62.8)
16-24 MO. (761 days)	4 DTP, 3 POLIO, 1MMR	45.7	(44.7-46.7)	---	---	37.1	(31.7-42.5)	44.4	(43.9-44.8)
35 MO. (1095 days)	4 DTP, 3 POLIO, 1MMR	59.9	(58.9-60.9)	71.0	(66.7-75.3)	---	---	50.6	(50.2-51.1)
SAMPLE SIZE		9,544		1,793		4,779		45,920	
BIRTH COHORT		1/87 - 8/91		5/91 - 5/93		6/92 - 4/94		1/92-12/92	

* TRIS and CASA coverage levels were recalculated utilizing "Age Group" and "Series" criteria from the 1994 TDHHS.
TRIS cohort mean age is 30 months; 93.1% of cohort was 24 months old during 90-91 school year.
TRIS and CASA levels are unweighted.
CDC/NIS cohort mean age is 27 months.

Rickettsial Diseases

Two rickettsial diseases of humans are reportable to the Texas Department of Health: flea-borne typhus, caused either by Rickettsia *typhi* or a similar recently recognized organism called Rickettsia *azadii,* and Rocky Mountain spotted fever (RMSF), caused by Rickettsia rickettsii. Case reports of human ehrlichiosis, which was not reportable in 1995, were also collected. A brief epidemiologic summary of these diseases for 1995 is provided below.

There was an almost 6-fold increase in the number of substantiated flea-borne typhus cases; 53 cases were confirmed this year, while only 9 cases were confirmed in 1994. Most of this year's cases occurred in patients who resided in South Texas: 27 in Hidalgo County and 13 in Nueces County. Three patients resided in Cameron County, 2 in Nolan County, and 1 each in Duval, Harris, Jim Wells, San Patricio, Scurry, Tarrant, Tyler, and Willacy Counties. At least 13 patients had known flea exposure. Thirty patients were male; 23 were female. Their ages ranged from 6 to 80 years. Onsets of illness occurred in every month of the year, with a peak in October: 3 in January, 2 in February, 2 in March, 1 in April, 2 in May, 6 in June, 6 in July, 5 in August, 4 in September, 10 in October, 4 in November, and 1 in December. Symptoms included fever (100% of patients), headache (74%), malaise (64%), nausea and/or vomiting (58%), anorexia (43%), and myalgia (42%). Nineteen (36%) persons had a rash. All but 11 patients were hospitalized; none of the patients died.

Six cases of RMSF were confirmed this year; 3 patients were male and 3 were female. Their ages ranged from 19 to 78 years. Onsets of illness were in July (3 cases), August (1), October (1), and November (1). Four of the patients were hospitalized; 1 patient died. All of the patients had fever and headache. Other symptoms included malaise (5 patients), nausea and/or vomiting (5), myalgia (3), and anorexia (3); 2 persons had a rash. Only 1 patient recalled a tick bite prior to illness.

Although in 1995 human ehrlichiosis was not yet a notifiable disease in Texas, 9 cases were reported. Of these, 6 patients were male and 3 were female, and ages ranged from 11 to 68 years. Months of onset were April (2 cases), May (2), June (3), September (1) and October (1). Six persons had a history of tick exposure prior to onset of symptoms; 2 patients may have been exposed in Arkansas. Seven of the 9 patients were hospitalized. Symptoms and laboratory findings included fever (9 patients), headache (7), malaise (7), myalgias (7), thrombocytopenia (7), anorexia (5), nausea/vomiting (5), elevated liver enzymes (3), and rash (3).

During the last 10 years, 2 types of human ehrlichiosis have been recognized in the United States: human monocytotropic ehrlichiosis (HME) and human granulocytotropic ehrlichiosis (HGE). HME is caused by Ehrlichia *chaffeensis,* a rickettsial organism with a tropism for monocytes/macrophages. The primary vector of E. *chaffeensis* is *Amblyomma americanum,* the lone star tick. Another species of Ehrlichia, related to E. phagocytophila (the agent of ovine tick-borne fever) and E. equi (the agent of equine ehrlichiosis), causes HGE. This as yet unnamed organism infects granulocytes, primarily neutrophils. The primary vector of the HGE agent is Ixodes scapularis, the black-legged tick. All cases of human ehrlichiosis in Texas to date are considered to be HME. The lone star tick is abundant throughout the eastern two-thirds of Texas and readily bites humans and other mammals from late February through early October. The black-legged tick also is present in Texas, but it is active in cooler months and only bites humans on occasion. Immature I. *scapularis* prefer to feed on reptiles, and adults feed on mid-size or large mammals. All cases reported to date have had positive antibody titers to E. *chafeensis* and/or *E. canis*. However, unidirectional cross-reactivity does occur. In a recent study conducted at the CDC, one-third of sera from mice infected with the HGE agent reacted with E. *chafeensis,* whereas none of the sera from mice infected with E. *chafeensis* reacted with the HGE agent.

Infectious Disease Epidemiology and Surveillance Division **(512)** *458-7676*

Salmonellosis

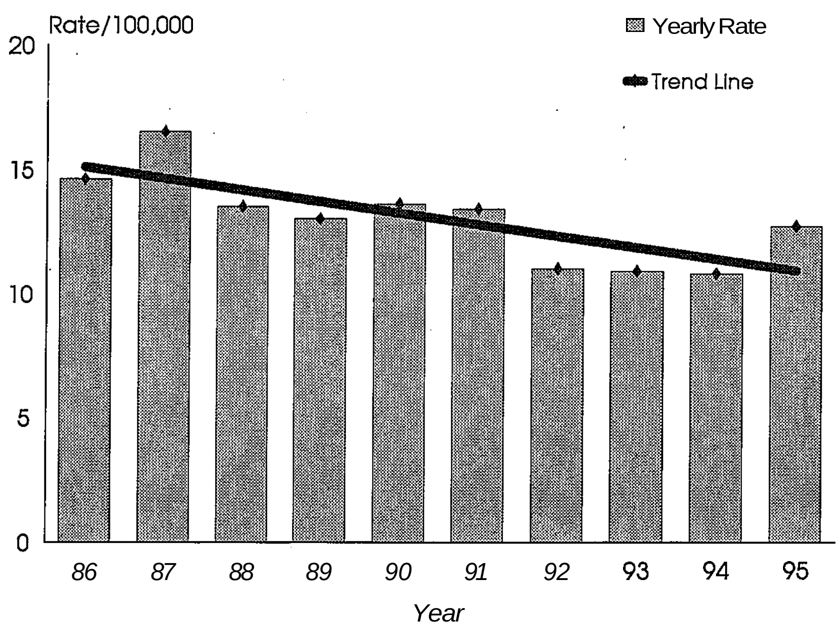
There were 2,363 cases of salmonellosis reported in 1995, an increase of 19.2% over the 1994 total. The annual statewide incidence rate was 13 cases per 100,000 population (Figure 1). The incidence of salmonellosis was higher among Hispanics, (17 per 100,000) than among whites (7) or African-Americans (7). The geographic distribution of salmonellosis by county and public health region is provided in the Regional Statistical Summaries Section.

Patients in 45% of **all** cases were children 4 years of age and younger. Their incidence rate of 67 cases per 100,000 population was the highest of any age group. In this age group, the incidence among Hispanics (71) far exceeded that of whites (43) or African Americans (36).

The species of the infecting organism was identified and reported for 1,507 (64%) of the cases: 19% were *Salmonella typhimurium;* 11% were *S. newport;* and 7% were S. *enteritidis.* Two outbreaks of salmonellosis, which accounted for 92 cases, were investigated by the Infectious Disease Epidemiology and Surveillance Division in 1995.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

Figure 1. Salmonellosis Rates 1986-1995



Salmonella agona: Large Outbreak with Two Separate Foci

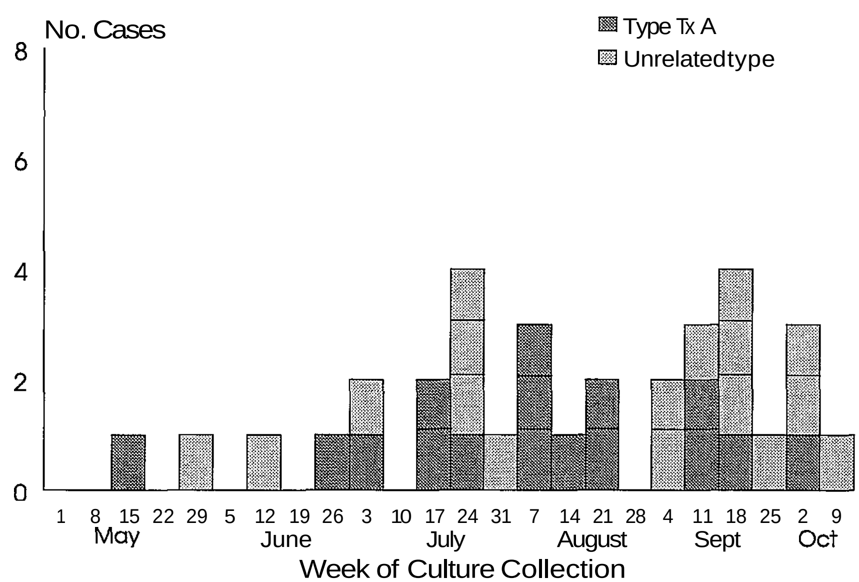
In September 1995 the TDH laboratory, which is responsible for serotyping isolates of Salmonella that are submitted by laboratories across Texas, identified an unusual number of isolates of Salmonella agona. The isolates they received were from all areas of the state and were collected over several months, so it was unclear whether or not this represented a common-source outbreak. Therefore, the laboratory performed molecular analysis of the isolates using pulsed-field gel electrophoresis (PFGE). Of 17 isolates submitted from Austin and San Antonio, 11 were indistinguishable by PFGE. These results suggest that the source of infection for these 11 patients was the same. The laboratory labeled this strain Tx-A. Strains from other areas of Texas were all different. The laboratory then informed the Infectious Disease Epidemiology and Surveillance (IDEAS) Division, and an investigation commenced to determine if there was a common source of the infections.

In an attempt to find more cases, 2 other Texas laboratories that serotype Salmonella isolates were contacted: a military hospital laboratory in San Antonio and the Houston City Laboratory. Although the San Antonio laboratory had not isolated any S. agona, the Houston laboratory had 7 in 1995. These isolates were forwarded to the state laboratory for PFGE analysis, and 2 were determined to be PFGE type Tx-A.

One of the Houston type Tx-A case-patients was in Nicaragua the week prior to illness onset and therefore was not helpful in determining the source of this outbreak. However, the other case-patient from Houston had been in San Antonio with his family prior to illness. Two other members of his family were ill; they had eaten only 2 meals together, both at a small taco house in downtown San Antonio.

For this investigation, a case-patient was defined as an individual with a stool culture positive in 1995 for Salmonella agona with PFGE type Tx-A. The laboratory eventually identified 16 S. agona isolates that were PFGE type Tx-A: 8 from Austin and 8 from San Antonio (Figure 1). Initially, open-ended interviews with the case-patients revealed no obvious common exposure such as through eating at the same restaurant, travelling, or owning pets. A case-control study did not yield useful results. This outcome may have been due to the length of time between the onset of the patient's illness and the interview; most patients were being interviewed several weeks after the onset of illness.

Figure 1. ***Salmonella agona*, May - October by Week of Culture Collection**



With this new information, IDEAS staff re-interviewed 7 of the case-patients from San Antonio, 6 of whom had also been to this small taco house prior to their illness onsets. (The other case-patient was a child whose parents did not remember if the child had been there.) The San Antonio Metropolitan Health District tested various food samples from the taco house; one food sample was culture positive for *Salmonella agona*. Laboratory testing at TDH confirmed the isolate to be PFGE type Tx-A, the outbreak strain.

A dried beef product similar to beef jerky, called machacado, was the most likely source of illness for the San Antonio case-patients. The taco house made machacado on site, by drying strips of beef cut from a large piece of three-bone chuck. Since no heat was used during the drying step, *Salmonella* could easily have survived the production process. The case-patients did not report eating machacado, but all had eaten fresh salsa verde. The salsa verde likely was cross-contaminated by raw machacado; both were prepared in the same blender, and the blender was inadequately washed. Although a definitive source could not be found for the Austin cases, evidence suggested that the ultimate source for outbreaks at both locations was a single meat distributor located in Corpus Christi.

This outbreak would have gone undetected without molecular laboratory surveillance, but traditional shoe-leather epidemiology was needed to determine the cause and to implement control measures. This outbreak illustrates how public health laboratories and epidemiologists can and must work together to protect the public's health.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

Serogroup C Meningococcal Outbreak in Gregg County

An outbreak of serogroup C meningococcal disease (SCMD) that began in Gregg County in 1994 continued during 1995. Gregg County, located in east Texas, has a population of 106,400; persons aged 2 to 29 years comprise 43,177 of this total. Longview is the largest city in the county. This outbreak involved 20 cases of culture-confirmed SCMD. The patients ranged in age from 1 month to 37 years. Seventeen patients were aged 2 to 27 years, with a median age of 15 years. The other 3 patients were aged 1 month, 1 year, and 37 years. Twelve (60%) of the patients were males. Whites, who make up 70% of the county's population aged 2 to 29 years, accounted for 90% of the cases. Eighteen of the 20 patients were Longview residents. This outbreak resulted in 3 deaths, which occurred in February, June, and September. The patients who died were a white 1-year-old boy and two 19-year-old young women.

During 1994, 13 cases of SCMD occurred. Eight of the 13 cases occurred from January through June 1994, and 5 of the 8 patients were from 2 to 7 years of age. Because the rate of SCMD was 21 cases per 100,000 population in January and February, meningococcal vaccine was recommended; 10,416 doses were administered to Gregg County children who were 2 through 9 years of age.

From January to March of 1995, 7 cases of SCMD occurred. The age range for 4 of the patients was 18 to 27 years. It was decided at that time to increase the meningococcal vaccine target group to include Gregg County residents aged 10 through 29 years. In the US the expected rate of meningococcal disease is 1 case per 100,000 population. For the first 3 months of 1995 the rate of meningococcal disease in Gregg County for persons aged 2 through 29 years was 16 cases per 100,000 population. The Texas Department of Health (TDH) and the Centers for Disease Control and Prevention (CDC) recommend the use of meningococcal vaccine to control an outbreak when the rate of disease is greater than 10 cases per 100,000 population. By September 1995, 19 cases had occurred in Gregg County, even though 27,000 individuals aged 2 to 29 years had been vaccinated during the 1994 and 1995 campaigns.

To determine the efficacy of the vaccine in this population, TDH, in cooperation with the CDC, conducted a case-control study in Gregg County in September of 1995. Serogroup C meningococcal disease patients who were 2 to 29 years of age were enrolled in the study. The ratio of patient per age-neighborhood-matched controls identified was 1:6 or 1:3. The control group was used to estimate vaccine coverage and to identify risk factors associated with nonvaccination. Seventeen case-patients and 84 controls were enrolled. Calculated vaccine efficacy was 85% and did not change with other risk factors, which included maternal education less than high school, passive smoke exposure, and church attendance. Among controls, older age was strongly associated with nonvaccination. The vaccination rate in 2- to 4-year-olds was 67%; in 5- to 18-year-olds, 48%; and in 18- to 29-year-olds, 20%. Watching television news less than twice per week was also associated with nonvaccination. The investigation confirmed the efficacy of meningococcal vaccine in an outbreak. More meningococcal vaccine clinics were held to increase the rate of vaccination in 18- to 29-year-olds.

In 18 of the 20 cases, isolates were available for serogrouping and pulsed-field gel electrophoresis (PFGE). All 18 isolates were serogroup C. Seventeen were indistinguishable by PFGE. Enzyme typing done at CDC identified this *Neisseria meningitidis* group C as the Canadian Carrollton strain. During 1995, 22,902 residents were vaccinated; 10,416 were vaccinated during 1994. The last 1995 case in Gregg County occurred in October.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

sexually Transmitted Diseases

Primary and Secondary Syphilis

Caused by the spirochete *Treponema* pallidurn, acute syphilis is characterized clinically by primary lesions followed by secondary eruptions involving the skin and mucous membranes. Untreated syphilis progresses into a chronic disease with long periods of latency. Statewide, 1,557 cases of primary and secondary (P&S) syphilis were reported in 1995. This 19% decrease over cases reported in 1994 continues a downward trend. The number of P&S syphilis cases reported in 1995 was 70% less than the number reported in 1990. The overall state rate in 1995 for P&S syphilis was 8.4 cases per 100,000 population. More than one-third of these patients were aged 15 to 24 years.

African Americans continue to account for the majority (75%) of P&S syphilis cases reported in Texas. The rate of P&S syphilis among African Americans was 54 per 100,000 in 1995. Although more than 20% lower than in 1994, the rate for African Americans remained extremely high compared with other ethnic groups (Figure 1). The case rate for Hispanics was 3.3 per 100,000, for whites, 1.6, and for other ethnic groups (including cases with race unspecified) 9.9 per 100,000. African American men and women aged 20 to 24 years showed the highest rates: 132 cases per 100,000 for men of this age group and 176 cases per 100,000 for women (Figure 2). The extremely high case rate for both sexes indicates the continuing severity of the problem of P&S syphilis among young African Americans in Texas.

Cases reported in 1994 indicated that the number of women with P&S syphilis exceeded the number of men for the first time. However, 1995 reports indicated that women were once again slightly outnumbered by men with P&S syphilis. Women accounted for 769 cases (49.4% of the total) compared with 787 cases among men.

Early Latent Syphilis

The early latent stage of syphilis follows untreated secondary syphilis after a period of weeks or months. In this latent stage, positive clinical signs are absent and detection of syphilis relies upon serologic tests. Early latent syphilis may be infectious; therefore, analysis of early latent syphilis cases, in addition to P&S syphilis, is important in identifying disease trends.

Figure 1. Primary and Secondary Syphilis Case Rates by Ethnicity

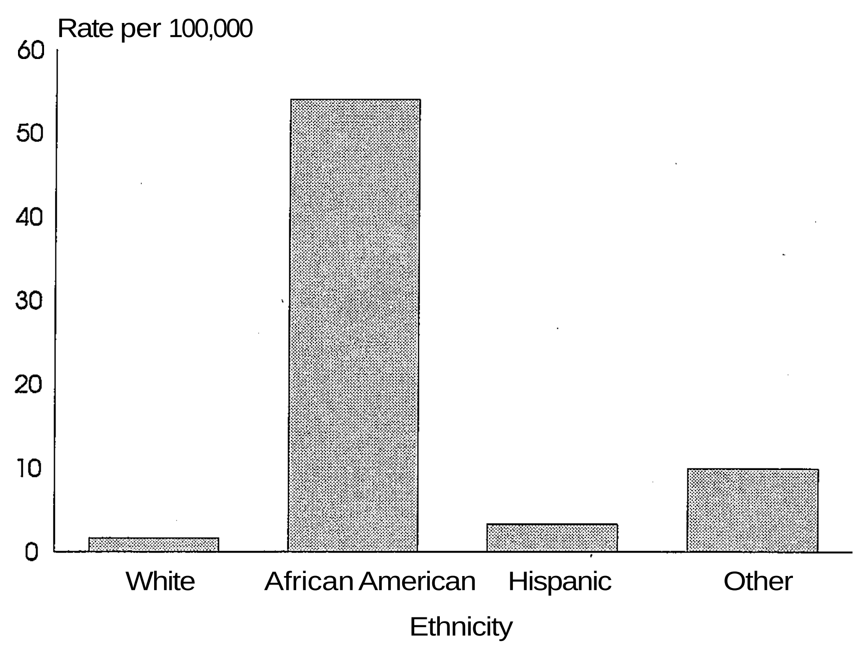
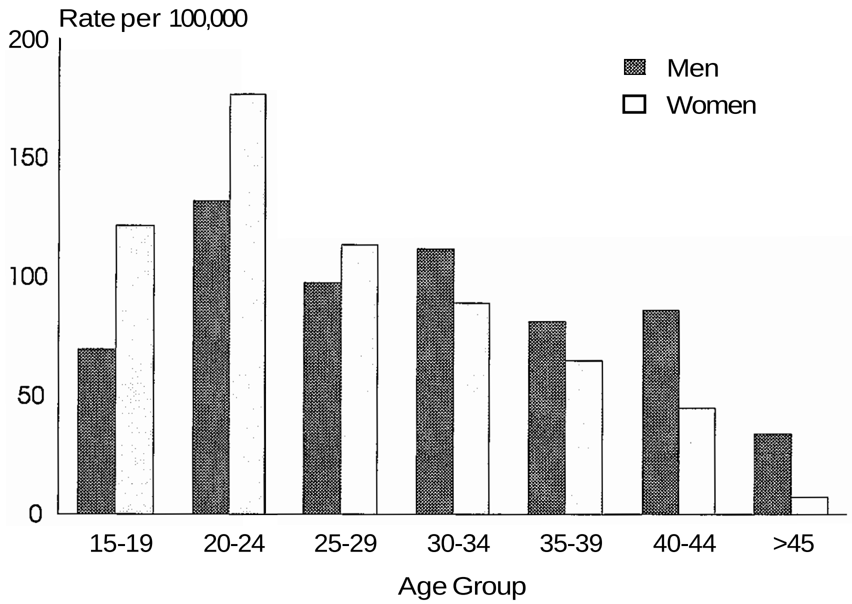


Figure 2. Rates of Primary and Secondary Syphilis Among African Americans by Age Group and Sex



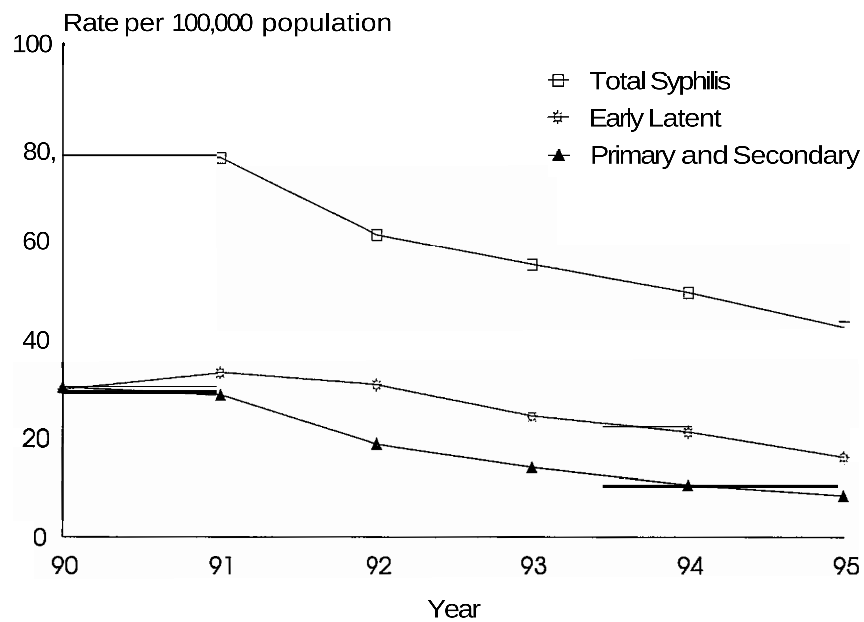
In 1990, there were slightly over 5,000 cases of P&S and of early latent syphilis reported with similar rates of 30.4 and 29.9, respectively (Figure 3). Since that time, the number of cases of P&S syphilis has steadily declined, but the number of early latent syphilis cases increased substantially in 1991 and has decreased at a much slower rate than that for P&S syphilis cases. Although both were considerably lower in 1995 compared with 1990, the number of early latent syphilis cases (3,019) remained almost twice as high as that for P&S. For 1995, the overall rate of early latent syphilis (16.2 cases per 100,000) was almost twice the rate for P&S syphilis (8.4 per 100,000).

In 1995, African Americans constituted 68% of all early latent syphilis cases, followed by Hispanics (17%) and whites (11%). Women aged 15 to 29 years made up almost 60% of all females with early latent syphilis while men in this age group accounted for slightly more than 40% of all cases in males.

Congenital Syphilis

One of the most serious forms of the disease, congenital syphilis may cause abortion, stillbirth, or premature delivery, as well as numerous severe complications in the newborn. In 1995,192 cases of congenital syphilis were reported, marking the third straight year of decline. The lower number of congenital syphilis cases in 1995 represented a 14% decrease from 1994. With 88 cases, Harris County had the highest number of congenital cases, 3 cases more than in 1994. Jefferson County had the second-highest number at 14 cases. Statewide, 60% of congenital cases were in African Americans, 22% in Hispanics, and 8% in whites. The proportion of congenital syphilis

Figure 3. Syphilis Case Rates, 1990-1995



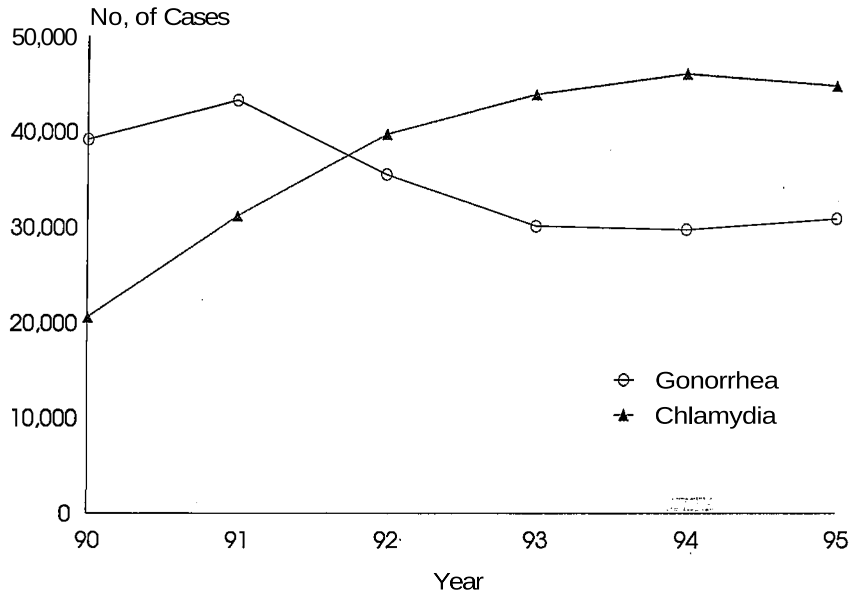
cases among Hispanics was higher than the proportion of either P&S cases or early latent syphilis cases in this ethnic group.

Chlamydia

Infections caused by the bacteria *Chlamydia trachomatis* are among the most common of all sexually transmitted diseases. Chlamydia infection in women can result in serious complications such as pelvic inflammatory disease and ectopic pregnancy. Reports of chlamydia in 1995 totalled 44,738, a 3% decline from the previous year (Figure 4). Although slight, this decrease is the first hint of the number of cases levelling since chlamydia became reportable in 1987. Of the total chlamydia cases reported, 86% were in females. Women are more likely to be screened for chlamydia during clinical exams for family planning, prenatal care, and routine pap smear testing. Because of the increased risk of severe outcomes (including the potential to infect a newborn child), chlamydia screening programs focus on women. Males are often asymptomatic and therefore do not seek treatment. Given that men make up such a small proportion (less than 15%) of chlamydia cases reported, there is no way to estimate the true incidence of chlamydia in the Texas population.

Due to the overwhelming proportion of cases among women, rates for each sex should be examined separately. The 1995 case rate for females was 407 cases per 100,000 with African American women having the highest rate (977 cases of chlamydia per 100,000 population) followed by Hispanic women (567) and whites (140). Men showed the same racial/ethnic distribution as women but with far lower rates. However, if males were equally targeted for screening and testing, incidence among males would most likely be higher than suggested by case reports.

Figure 4. Gonorrhea and Chlamydia Cases, *1990-1995*



Looking at cases reported by age group reveals 73% of all reported chlamydia cases were aged 15 to 24 years of age. With more than 28,000 cases reported for women 15 to 24 years of age alone, the rates for chlamydia among young women age 15 to 19 years and 20 to 24 years were 2,408 and 1,840 per 100,000, respectively.

Gonorrhea

Gonorrhea is caused by the bacteria *Neisseria gonorrhoeae.* Left untreated, gonorrhea may lead to pelvic inflammatory disease or ectopic pregnancy in women, with sterility a possibility for both sexes. In Texas, the 30,893 cases of gonorrhea reported in 1995 represented an increase over the previous two years. Except for an increase in 1990, gonorrhea in Texas had been decreasing since 1978 when almost 90,000 cases were reported. Cases reported in 1995 were 4% higher than in 1994 (Figure 3).

The 1995 overall rate for gonorrhea was 166 per 100,000 with males (172) having a higher rate than females (158). Among age groups, the highest rate for females was found in women aged 15 to 19 years (872 per 100,000) followed by those aged 20 to 24 years (608 cases per 100,000). Men in these age groups also had higher rates than did other males. Gonorrhea among women aged 15 to 24 years comprised 67% of all cases in females; men of the same age group accounted for 52% of all gonorrhea cases among males.

Examining racial/ethnic groups, the rate for African Americans (911 cases per 100,000) is 10 times greater than that for Hispanics (88 cases per 100,000) and 25 times higher than the rate for whites (36 per 100,000). African American males had the highest rate of all race-sex groups, with 1,111 cases per 100,000 population. As was seen for all gonorrhea cases, African Americans aged 15 to 24 years accounted for the greatest share of African American cases (60% of those reported); they also represented 38% of all cases reported, regardless of race or age.

HIV and STD Epidemiology Division (512) 490-2545

Shigellosis

In 1995, 3,017 cases of shigellosis were reported in Texas, an increase of 607 cases (25%) over 1994. The annual statewide incidence rate was 16 cases per 100,000 population. Figure 1 illustrates the rise in shigellosis morbidity rates since 1985. The geographic distribution of shigellosis by county and region is provided in the Regional Statistical Summaries section at the back of this publication.

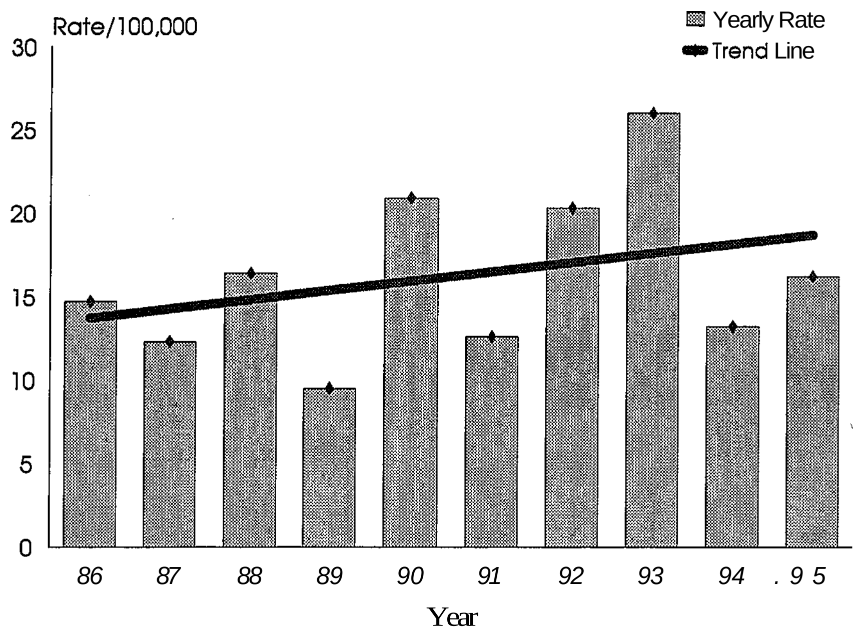
The overall incidence of shigellosis was higher among Hispanics (30 cases per 100,000) than among African Americans (12 cases per 100,000) or whites (8 cases per 100,000). Children from birth to 4 years of age constituted 38% of all cases, and their incidence rate of 72 cases per 100,000 population was the highest rate for any age group. Among Hispanics, the incidence rate of 115 cases per 100,000 for children from birth to 4 years of age far exceeded that of African Americans (55 cases per 100,000) or whites (30 cases per 100,000).

The *Shigella* species isolated was identified and reported in 1,926 cases (64%). Of those, 81% were *Shigella sonnei;* 16% were *S. flexneri;* 3% were *S. boydii;* and 1% were *S. dysenteriae.*

Seven outbreaks of shigellosis were reported to the Infectious Disease Epidemiology and Surveillance Division in 1995, accounting for 242 (8%) cases. Outbreaks ranged in size from 6 to 104 cases. S. *sonnei* was identified as the causative agent in each incident.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

Figure 1. Shigellosis Rates 1986-1995



Shigella sonnei: Multistate Outbreak Originating in Harlingen

In July 1995, an outbreak of Shigella sonnei was simultaneously detected in Iowa and Nebraska. Because all the patients had recently attended a convention in Harlingen, Texas, the Texas Department of Health (TDH) was notified by the state epidemiologist of Iowa; an investigation was conducted to determine the source of the infections and implement any necessary control measures.

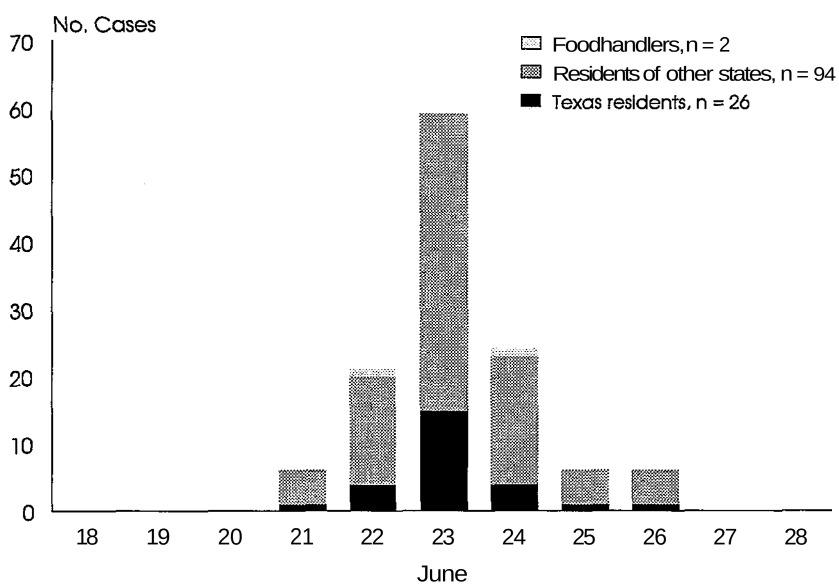
The convention in Harlingen was attended by 600 persons from over 25 states. Open-ended interviews with several of the Texas attendees suggested that one particular meal served during the convention was responsible for transmission. Three studies were undertaken to investigate the outbreak: a cross-sectional study of all Texans who attended the convention, a cohort study of all Texans who attended the implicated meal, and a national survey of all attendees.

For these three studies, a case was defined as acute onset of diarrhea and one other symptom in a convention attendee from June 21 through 27. The epidemic curve illustrates the onset dates for the 120 total cases identified (Figure 1).

The Cross-sectional Study

Ninety-two randomly chosen Texas residents who pre-registered for the convention were surveyed by phone. Interviews were completed for 81 persons, and 73 had actually attended the convention. Nineteen (26%) of the 73 met the case definition; 46 had no illness at all and were used as controls. For all convention meals except two, there was no statistical association between illness and meal attendance.

Figure 1. Epidemic Curve, Shigellosis Outbreak, Harlingen



However, for one luncheon, called the Bluebonnet Lunch, all 19 case-patients were in attendance, yielding an infinite relative risk. A simultaneous meal, called the Yellow Rose Lunch, was attended by none of the case-patients, so the relative risk was zero.

The Cohort Study

Sixty-three Texas attendees who preregistered for the Bluebonnet Lunch were surveyed. Forty-nine were reached, and 45 had actually attended the meal. Twenty-three (51%) of the 45 met the case definition; 21 were well and served as controls. Since the Bluebonnet Lunch was served already packaged on a plate, most of the attendees ate most of the items served. In fact, all case-patients ate chicken salad, pasta salad, and apple crisp dessert, as did most of the well attendees. Thus, no conclusions could be made from this survey concerning food items that might be the source of infection.

The National Mail-Out Survey

A brief questionnaire was mailed to all conference attendees from 24 states. Two hundred fifty-seven persons returned a completed survey. Of the 257, 85 (33%) met the case definition. As with the Texas study, the Bluebonnet Lunch was statistically associated with illness, with a relative risk of 5.8 and with 95% confidence intervals of 3.3 to 10.0. In addition, chicken salad at the lunch was associated with illness (infinite relative risk), but pasta salad and apple crisp were not. Therefore, when the national data were used, chicken salad from the Bluebonnet Lunch was implicated as the vehicle for this outbreak.

Food for the Bluebonnet Lunch had been prepared at the lodge where the convention was held. **All** other meals during the convention were catered by an outside company. Two of the cooks at the lodge became ill during the convention; but because both had onset after the Bluebonnet Lunch, they were likely victims of the outbreak rather than its source. A third foodhandler could not be reached for interview, but reportedly had not been ill. Additionally, several volunteers among convention attendees helped prepare and serve the implicated meal but could not be identified for interview.

Area emergency rooms and hospitals were surveyed to rule out a larger statewide outbreak; no increase was detected in the number of persons seeking medical attention for diarrhea or in the number of *Shigella sonnei* isolates from stool samples. Also, the TDH laboratory performed pulsed-field gel electrophoresis on all *Shigella sonnei* isolates from across Texas at the time of the outbreak; no strains related to the outbreak strain were detected. Therefore, this outbreak appeared to have resulted when an unknown mechanism caused local contamination of the chicken salad with *Shigella.*

This large, multistate outbreak of *Shigella* may have gone undetected without prompt reporting from a variety of local health departments across Texas and the US. Complete, timely reporting is imperative in order to detect and control such geographically dispersed outbreaks.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676.

Foodborne Shigellosis Outbreak in an Elementary School

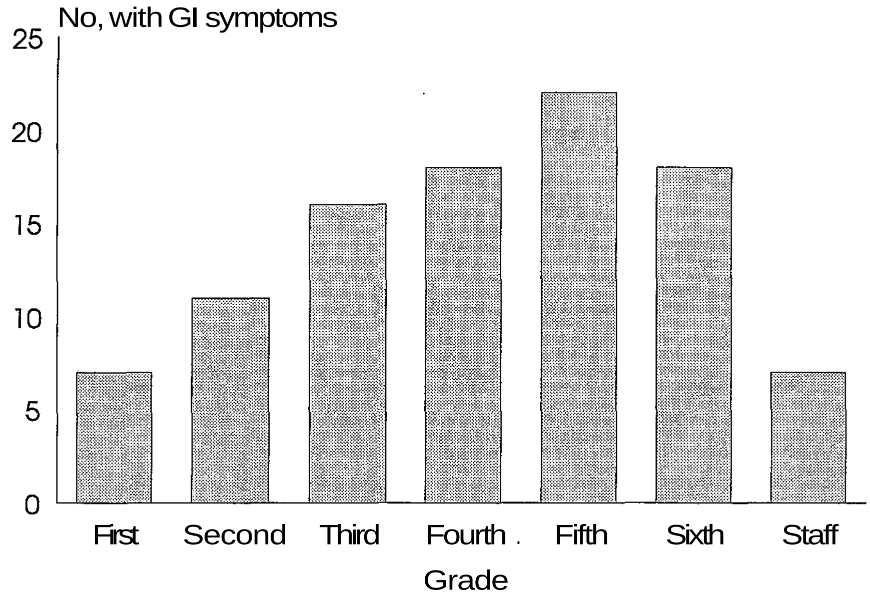
On January 12, school officials from an elementary school in West Texas contacted the local health department to report a 5-fold increase in the absentee rate. The average daily population of the school is 460 students, and the average absentee rate for the school is 4.3%, or about 20 students per day. On January 11 the absentee rate was 11.7% (54 students), and on January 12 the rate reached 21.3% (98 students).

A telephone survey conducted by the local health department revealed that approximately 90% of the ill students had gastrointestinal symptoms which included vomiting, diarrhea, fever, severe stomach cramps, and headache. Six teachers were also absent with a diarrheal illness. The majority of the people contacted reported onset of symptoms between January 10 and January 12. Preliminary culture results from 2 of the symptomatic children were positive for *Shigella sonnei*. The Infectious Disease Epidemiology and Surveillance (IDEAS) Division was notified of a probable foodborne illness outbreak at the school and an investigation was begun on January 12.

The school district administration office was notified, and it was determined that no other school in the district was experiencing a higher than normal absentee rate. Emergency rooms and other primary care facilities were advised of the suspected outbreak in an effort to identify additional cases.

Further investigation revealed that 1 of the 4 food service workers at the school had onset of a diarrheal illness on Tuesday, January 11. This worker had cared for her granddaughter on Friday and Saturday, January 6 and 7. During this period the child also had a diarrheal illness.

Figure 1. Grade Distribution of Cases



There were no extracurricular school activities scheduled on the weekend prior to the outbreak.

Additional stool specimens were collected from all the food service personnel and as many of the ill students as possible on Friday, January 13. As a matter of course, the school cafeteria saved food samples from each meal. Sanitarians from the local health department collected some of these samples.

For the purpose of this investigation, a case was defined as a positive stool culture or illness characterized by vomiting, diarrhea, fever in combination with any gastrointestinal symptom. Onset of symptoms must have been later than January 9. A detailed food history and symptomology questionnaire was developed. Food history data focused on the lunch meals served at the school between Thursday, January 5 and Wednesday, January 11. On Friday, January 13, questionnaires were completed for all students present for school that day who reported a recent gastrointestinal illness and for at least an equal number of non-ill students from the same classrooms. Data collection for all students was accomplished using face-to-face interviews. Four Vista volunteers assisted health department officials in data collection.

83%; fever, 82%; headache, 79%; vomiting, 59%; chills, 59%; and bloody diarrhea, 16%. Of the 54 patients who reported subjective fever, 21 had taken their temperatures, which ranged from 99.6 to 103.4°F, with a mean of 101.8°F. One child was hospitalized.

Stool cultures were obtained for 14 of the patients. Eleven were positive for *Shigella sonnei*. Additionally, *Shigella sonnei* was cultured from two asymptomatic food service workers. *All* submitted food samples were negative for *Shigella.*

Table 1. Number Exposed by Meal and Food Item (n=124)

	Ate		Did not eat			
Criterion	**Ill**	**Not Ill**	**Ill**	**Not Ill**	**Odds Ratio**	**p Value**
Ate on Thurs 1/5	40	52	16	16	0.77	0.5231
Ate on Fri 116	44	58	12	10	0.63	0.3295
Ate on Mon 1/9	54	50	2	18	**9.72**	**0.0006**
Chicken Fajitas	50	45	6	23	**4.26**	**0.0025**
Salad	34	15	22	53	**5.46**	**0**
Pinto beans	26	29	30	39	1.17	0.6732
Tortillas	42	45	14	23	1.53	0.2852
Milk	46	48	10	20	1.92	0.1349
Ate on Tues 1/10	41	56	15	12	0.59	0.2198
Ate on Wed 1/11	19	53	37	15	0.15	0

Additional interviews of staff and students who had been absent on Friday, January 13 were conducted on the following Tuesday and Wednesday.

Of the 135 individuals on whom data were collected, 56 met the case definition; 68 healthy students and teachers served as controls. Eleven individuals had onset of symptoms prior to January 11 and were not considered in the analysis. Onset of illness began on January 11 (22 individuals), peaked on January 12 (57 individuals), and continued through January 13 and 14 (9 and 3 individuals respectively). The grade distribution of the cases is influenced by the number of ill students who could be interviewed (Figure 1).

The patients ranged in age from 6 to 56 years of age with a median age of 10 years. The majority (58%) were females. The frequency of symptoms among the cases was: cramps, 91%; diarrhea,

Univariate analysis of the data revealed that case-patients were more likely than controls to have eaten lunch on Monday, January 9 (OR 9.72, p=0.0006); chicken fajitas (OR 4.26, p=0.0025); or tossed salad (OR 5.46, p=0.00001). After controlling for eating tossed salad, analysis showed that fajitas were not associated with illness. Eating on any other day was not associated with increased risk of infection (Table 1).

Recommendations

The actions of the local health department in outbreak identification and disease intervention were timely and appropriate. The augmentation of the already understaffed department by Vista volunteers was an exemplary utilization of resources.

The local school district policy dictates that samples of food served be collected and saved for later analysis. However, not all food items were saved in quantities sufficient for complete culturing. Under normal circumstances the Texas Department of Health Laboratory will culture food specimens for many different pathogenic organisms. To complete this culture battery, the laboratory requires at least 100 grams **(3**½ ounces) of each food item. In this incident, *Shigella* had already been implicated in the outbreak, so the laboratory was able to limit testing to just this one organism. It may be of value for all local health departments to advise the school districts within their jurisdiction of the need to save at least 100 grams **(3**½ ounces) of each food item.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

Shigellosis on a Cruise Ship

On March 21,1995, a Central Texas resident contacted the Infectious Disease Epidemiology and Surveillance (IDEAS) Division regarding gastrointestinal illnesses that he, his wife, and a number of other persons had experienced during a shipboard cruise. The cruise ship departed Cozumel, Mexico, on March 12 and returned to Cozumel on March 19. Ports of call included Belize, Guatemala, and Honduras. The caller provided names and telephone numbers for several other Texans on the cruise who had been ill. Following conversations with these individuals, an investigation was initiated. The Enteric Diseases Branch and Vessel Sanitation Program of the Centers for Disease Control and Prevention and state health departments (pas'sengers were from across the nation) were alerted to the potential outbreak. A letter was also sent to the Director General de Epidemiologia in Mexico City.

The ship, operated by a New York-based company, sailed part of the year out of Cozumel and part of the year in the Mediterranean. The passenger capacity was about 450 and the crew complement, 225. The total number of persons on board for this particular cruise was not reported, but 50 persons with Texas addresses were identified from the ship's passenger manifest.

Using information provided by the cruise company, 48 of the 50 Texans on the cruise were contacted, and a limited questionnaire was administered by telephone. Information obtained included: gastrointestinal symptoms experienced; the number of times food was consumed from buffet lines, ordered from the menu, or ordered from room service; the amount and type of seafood consumed; what foods may have been consumed on shore prior to embarkation and at each port of call; and the average daily number of glasses of water consumed on board. The 32-page menu and numerous dining options available to passengers precluded asking detailed food histories.

Of the 48 passengers interviewed, 33 (69%) reported gastrointestinal symptoms including diarrhea (94%), abdominal cramps (64%), nausea (36%), and vomiting (30%). Other symptoms included headache (49%), fever (42%), and malaise (42%). Dates of onset of symptoms ranged from March 13 to March 25, with 22 (67%) reporting onset between March 17 and March 19. Symptoms experienced by ill passengers were consistent with shigellosis. Three passengers had stool cultures done; 1 was positive for *Shigella sonnei.*

To meet the case definition in this investigation, a passenger had to have a positive stool culture, diarrhea, or three non-diarrheal syrnptoms with onset between March 15 and 21. Of the 33 passengers reporting symptoms, 31 met the case definition; 15 well passengers served as controls. Statistically, there was no association between illness and consumption of food on board or on shore either prior to embarkation or at any of the **3** ports of call. An association was observed between illness and water consumption on board. Passengers who reported consuming more than 5 glasses of water per day were 11.5 times more likely to develop illness than those who consumed 5 or fewer glasses per day ($p=0.009$).

Sixty-five percent of Texans on board experienced illnesses that fit the case definition. If a similar percentage of other passengers and crew were affected, as many as 440 persons could have been ill during and/or after the cruise. The findings of our investigation were reported to the cruise line with the recommendation that the ship's water supply be investigated.

Because the ship did not make port calls in the United States, the Vessel Sanitation Program had no record of past sanitation inspections, and the Enteric Diseases Branch did not conduct an investigation. The cruise line reportedly sent a team to investigate the ship after being contacted by IDEAS, but no information was forthcoming regarding the inspection or any remedial actions. If other states conducted any investigations, they were not reported to IDEAS.

Almost exactly one year after the outbreak, the original informant contacted IDEAS regarding dengue hemorrhagic fever in Puerto Rico, the destination of an upcoming cruise. During the conversation, he reported that the cruise line had filed for bankruptcy.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

St. Louis Encephalitis

St. Louis encephalitis (SLE) is an arboviral infection caused by a flavivirus. The natural cycle of the disease involves wild birds and mosquitoes. The birds serve as amplifiers of the virus by infecting the mosquitos. The virus is then transmitted to humans by the bite of infective mosquitoes. Mosquitoes in the genus *Culex* are the vectors for SLE in the United States.

Clinical infection in humans ranges from a mild febrile illness to meningitis and severe encephalitis. Many human infections, however, are inapparent or asymptomatic. Fever and headache are frequently the first and most persistent symptoms. The elderly are at greatest risk of developing encephalitis associated with SLE virus infection. From 1990 through 1994, 71 of 85 SLE patients (83%) in Texas resided in Harris County.

In 1995, 22 cases of St. Louis encephalitis were reported in Texas. The patients ranged in age from 20 through 93 years, with a median of 48 years. Most of the patients (15) were males and half (11) were African Americans.

A majority (19/22) of the patients resided in Dallas County. Brazos, Cameron, and Hopkins Counties each had one patient. The patient from Hopkins County reported a history of mosquito exposure in Dallas County. The 20 cases exposed in Dallas County represented the first outbreak of SLE in Dallas County since 1976. In 1976, 20 SLE cases were reported from Dallas County. Surprisingly, no cases were reported in Harris County, historically the endemic focus for SLE in Texas.

Onset of illness dates ranged from July 15 through November 15, 1995. The patient from Cameron County experienced onset in November 1995. Most of the patients (15) experienced onset of illness in September. Onsets for the Dallas County cases were from July 15 through September 29, 1995.

Overall, 6 patients died. Five of the deaths occurred among the 9 patients 50 years of age or older. Five of the patients associated with the outbreak in Dallas County died.

Infectious Disease Epidemiology & Surveillance Division (512)458-7676

Storm-Related Mortality: Dallas County, May 5-12

On May 5,1995, a line of violent thunderstorms originating in the Texas Panhandle, moved into Tarrant and Dallas Counties in north Texas. Tarrant County (Fort Worth) experienced large hail, 3 to 4 inches of rain, and gusty winds in excess of 70 miles per hour. As the storm moved east into Dallas County (Dallas), hail and high winds decreased, but the volume of rain increased. Total rainfall amounts ranged from 1 to 6 inches in Dallas County. Sixty percent of rain gauges in Dallas measured more than 3 inches of rain in a 30-minute period. The previous local, 30-minute National Weather Service record of 2.55 inches of rainfall was set in 1976.

The storm rapidly overwhelmed public services within the Dallas-Fort Worth area. An estimated 16,800 Dallas consumers were left without electrical power. Dallas 911 operators answered 4,803 calls, 4 times the normal call load, between 8:00 p.m. on May 5 and 2:00 a.m. on May 6. In addition, preliminary property damages were estimated to be near $500 million.

The storm affected a very densely populated county. The 1995 population of Dallas County is estimated to be 2,019,133 or approximately 11% of the entire population of Texas. Approximately one-half of Dallas County residents live in the city of Dallas.

This report summarizes findings of an epidemiologic investigation of deaths associated with the storm. Twenty persons, in 13 separate incidents, died as a result of the storm. The findings may be used to support the development of specific interventions aimed at preventing future storm-related mortality in Dallas County.

To assess mortality associated with this storm episode, staff of the Injury Prevention and Control Program, Bureau of Epidemiology, Texas Department of Health, and the Greater Dallas Injury Prevention Center, collaborated on data collection activities. Epidemiologic information was obtained from the Dallas County Medical Examiner and the City of Dallas Fire Department.

A case was defined as a death directly or indirectly related to the storm that occurred on May 5, 1995 in Dallas County. To capture all storm-related deaths, all traumatic deaths occurring between May 5 and May 12,1995 were examined. A directly-related death was defined as one that resulted from physical contact with a storm product, such as flood water, hail, or lightning. An indirectly-related death was defined as one that did not result from physical contact with a storm product, but would not have happened if the storm had not occurred. An example of an indirect death would be one resulting from a storm-related activity, such as electrocution due to post-flood cleanup.

Data of interest about each victim included age, race, gender, residence address, date and time of death, location of death, immediate cause and circumstances of death, source of flood water responsible for death (if appropriate), and distance of death scene from victim's residence.

Twenty deaths met the above criteria as directly or indirectly related to the storm. These deaths occurred in 13 separate incidents. Eighteen victims were Texas residents, one was an Arkansas resident visiting friends in Dallas, and one remains unidentified.* Seventeen of the known Texans were Dallas County residents, and one was a resident of Tarrant County. Fifteen victims (including 2 homeless individuals) were city of Dallas residents.

Seventeen of the 20 deaths (85%) were directly related to the storm. Drowning was the cause of death for 94% (16/17) of these victims; one person was struck by lightning and electrocuted.

*This individual is included in analyses for which we have relevant information concerning gender, race, and date and cause of death.

Three of the 20 deaths (15%) were indirectly related to the storm. Among the indirectly related deaths, 2 persons were killed when a roof, weakened by excessive rain accumulation, collapsed on them; and 1 person died from asphyxiation in a house fire caused by misuse of matches during a storm-induced power outage.

Figure 1. Storm-Related Deaths by Age

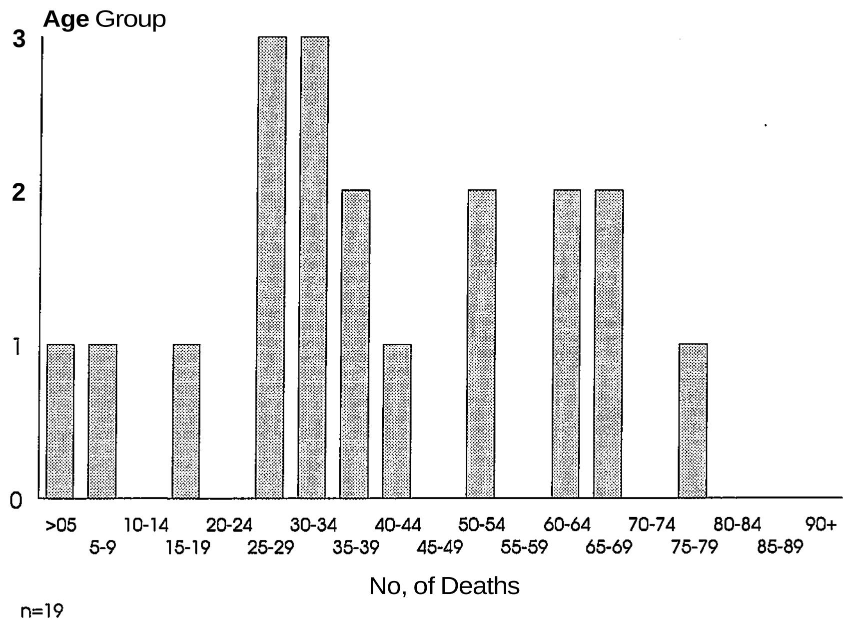


Figure 1 illustrates flood-related deaths by age. Age was available for 19 victims. Decedents ranged in age from 2 years to 78 years (mean: 40 years).

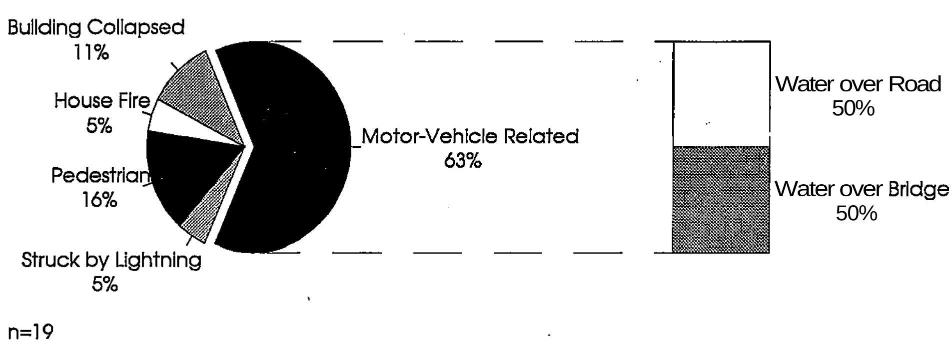
The gender of the 20 decedents was evenly distributed. Fifty percent (10/20) were males, and 50% (10/20) were females.

The racial/ethnic breakdown of storm-related victims is as follows: 9 (45%) African American, 6 (30%) white, and 5 (25%) Hispanic. Of those 15 victims who were city of Dallas residents, 7 (47%) were African American, 5 (33%) were Hispanic, and 3 (20%) were white. (The ethnic breakdown of the city of Dallas is 48% white, 29% African American, 20% Hispanic, and 3% Other.)

Figure 2 illustrates the circumstances surrounding the 19 storm-related deaths for which such information is known. Sixty-three percent (12/19) occurred because a motor-vehicle was first driven into high water. Half of these deaths resulted from driving into high water covering a ground-level road surface, and one-half resulted from driving into high water covering a bridge over a creek or river. All motor-vehicle related deaths were due to drowning. Five family members drowned together in 1 incident.

The remaining 37% (7/19) of the deaths were not related to motor-vehicles. Two deaths occurred to pedestrians attempting to cross flooded streets; 1 individual drowned attempting to rescue 2 others from high water; 2 employees were killed when the roof of a commercial building collapsed; 1 person was killed in a house fire; and 1 person died after being struck by lightning.

Figure 2. Storm-Related Deaths by Circumstance

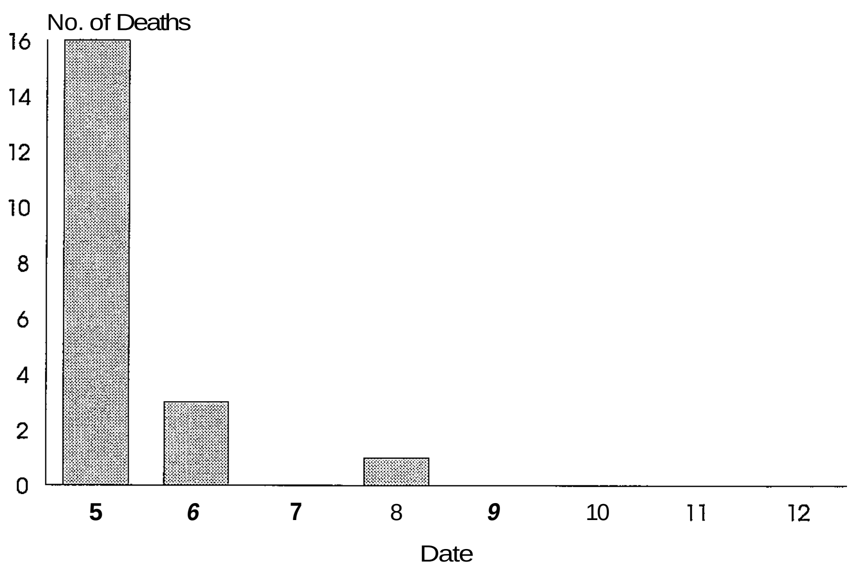


Eighty-one percent (13/16) of all drownings occurred in flash flood waters originating in rivers or creeks, namely the Trinity River, Cedar Creek, Prairie Creek, Turtle Creek, and White Rock Creek. Nineteen percent (3/16) of the drownings occurred in flash flood waters originating as street runoff.

Eighty percent (16/20) of the deaths occurred in the first day of the storm (May 5). Figure 3 illustrates flood-related deaths by date. No storm-related deaths occurred after May 8, 1995.

As figure 4 illustrates, of those victims with known times of death, 74% (14/19) died within a 90-minute period (9:00 p.m.-10:30 p.m.) on the evening of May 5. Eighty-six percent (12/14) of these deaths were due to drowning. Specifically, 42% (8/19) of the storm-related deaths occurred within a 30-minute time span (9:30 p.m.-10:00 p.m.) on May 5. Between 7:30 p.m. and 11:30 p.m. on May 5, Dallas County received from 1 to 6 inches of rain. All of the drowning deaths occurred in locations with rainfall totals of 4 to 6 inches. The majority of the drowning deaths (9/16 or 56%) occurred between 1 and 2 hours after the leading edge of the storm, which produced the heaviest amounts of rainfall, passed through the Dallas metropolitan area. The first storm-related death was from a lightning strike that occurred at 8:15 p.m., as the front began to cross into Dallas County. The subsequent drowning deaths occurred after the storm had passed and the large volume of runoff had caused drainage systems to overflow.

Figure 3. Storm-Related Deaths by Date, May 5-12



n=20

Distance of death location from residence was known for 92% (11/12) of motor vehicle-related victims. Death occurred an average of 5.5 miles from home (range: <1 to 20 miles).

Floods are the most common natural disasters in the United States, and cause the greatest number of disaster-related deaths[1,2]. Floods cause an average of 146 deaths among Americans annually[3]. Floods can be divided into 2 forms, each with a different significance for injury prevention. The first form, flash floods, occur within a few minutes or hours of excessive rainfall, or dam or levee failure, and account for most fatalities[4,5]. Sufficient warning time for rapid evacuation and road closure is essential to prevent fatalities during flash flooding. The second form, flooding, is a longer term event, and may last a week or more. Flooding is often seasonally related to melting snow and spring rains. There is more time to evacuate and re-route traffic during flooding.

Nationally, the most common cause of flood-related deaths is drowning[1]. More than half of flood-related drownings in this country occur among persons who attempt to drive vehicles through hazardous flood waters[1,2,5]. This investigation found that flash flooding accounted for all 16 drowning deaths. As detailed above, 63% of the deaths in this investigation occurred because a motor-vehicle was first driven into high water.

Dallas County has historically been susceptible to damage and loss of life due to heavy rains. Since the turn of the century, several storms have produced multiple fatalities, but as Table 1 indicates, none have caused as many deaths as the present storm.

Since the 1908 storm, Dallas has spent millions of dollars to construct an elaborate system of levees to redirect the flow of rivers and floodplains away from low-lying, populated areas.

Table 1. Sample Storms Producing Multiple Fatalities Dallas County, *1908-1995*

Date	Fatalities
May 5-8,1995	20
May 1-3,1990	4
April 28,1966	14
May 16-17,1949	10
April 24-25,1922	11
May 23-25,1908	11

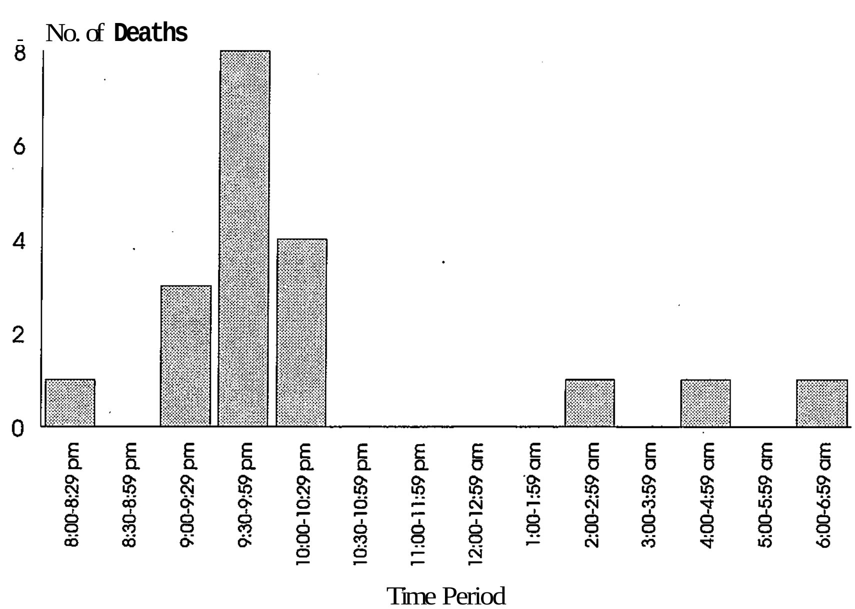
The Trinity River system is the primary runoff area for heavy rains. Additionally, between 1991 and 1992, Dallas installed a $2.4 million, computerized early warning system. This system, one of the most sophisticated in the country, includes a network of 42 automated rain gauges that transmit water level information to a central computer where experts examine the data to determine where flooding is likely to occur.

Officials have identified flash flood-prone roadway locations throughout the city. City personnel are assigned to barricade these areas when flash flooding appears imminent. Additionally, city personnel barricade other locations when water is reported to be over the roadway. The barricade plan was in progress when the storm hit the city, but the intensity and unique nature of this storm created flash flooding in unexpected locations. The majority of drownings occurred at locations where flooding does not normally occur and where barricades were not in place. Thus, while many of the drowning victims were near their places of residence, and perhaps familiar with the roadways on which they traveled, their familiarity may have affected their sense of risk for flash flooding. In fact, only one of the drowning deaths appears to have occurred when an individual disregarded roadway barricades.

The front line of the storm, which produced the heaviest rainfall amounts, passed through Dallas County on May 5, between 8:00 p.m. and 8:15 p.m. Lightning occurs along the leading edge of a storm front, so injuries and deaths from lightning will precede the main body of the storm. A flash flood warning was issued at 8:56 p.m., approximately 20 minutes before the first drowning incident occurred. Seventy-four percent (14/19) of the storm-related deaths occurred within the next 90-minutes (9:00 p.m.-10:30 p.m.). Eighty-six percent (12/14) of these deaths were due to drowning. *All* of the drowning deaths occurred in locations with rainfall amounts of 4 to 6 inches.

Preliminary examination of the ethnic composition of the city of Dallas and the 15 decedents (including 2 homeless individuals) who resided in Dallas, indicate a disproportionately higher number of African Americans and Hispanics died

Figure 4. Storm-Related Deaths by Hour, May 5-6



n=19

as a result of this storm. Reasons for this are unknown at this time and this issue warrants further study. It must be noted, however, that storm-exposure data, needed to make meaningful comparisons, are lacking. Note, these 15 deaths occurred in 10 separate incidents; 2 incidents had multiple fatalities. For example, there was a cluster of 5 drowning deaths (all African Americans) in 1 vehicle, and 3 deaths (2 African Americans and 1 Hispanic) associated with 1 incident.

The city of Dallas has conducted a review of its response to the storm emergency. Their report indicated the city's planning and operations pertaining to this storm were proper. Recommendations aimed at improving/enhancing response to future natural disasters included

- Improving the flow of critical information between command and field service units.
- Increasing the capacity for taking 9-1-1 calls.
- Providing specialized training for unusual events.
- Erecting of additional barricades.
- Developing a public awareness campaign to caution and inform citizens about high water dangers, flood safety, storm water system maintenance, and proper use of 9-1-1.

Finally, this report has documented the public health impact of the May 5th storm in Dallas County. The findings may be used to support the development or strengthening of interventions aimed at preventing future storm-related deaths in the area.

Injury Prevention and Control Program
(512) 458-7266

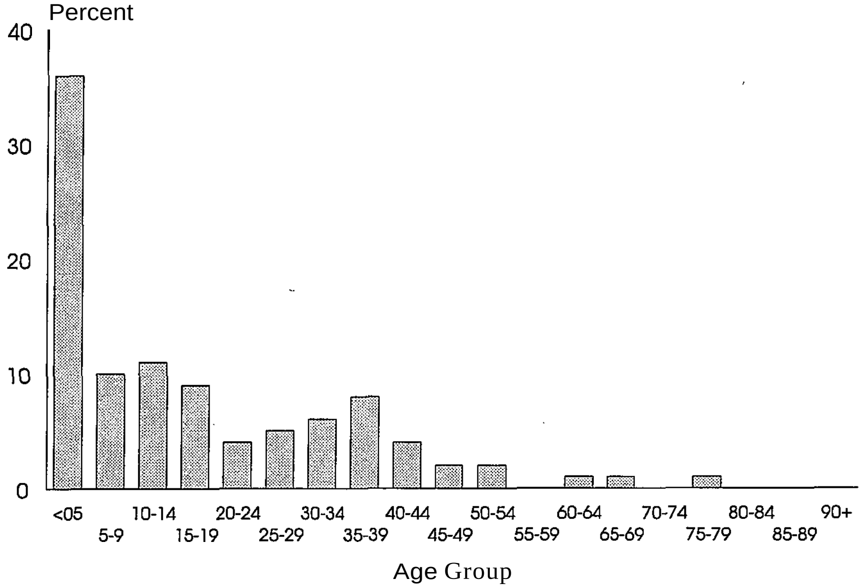
References

1. Frazier K. The violent face of nature: severe phenomena and natural disasters. New York: William Morrow and Company Inc., 1979.
2. Flood-related mortality - Georgia, July 4-14, 1994. JAMA, 1994 Aug; 272(7):508-509.
3. Federal Emergency Management Agency. A report to US Senate Committee on Appropriation. Washington, DC: Federal Emergency Management Agency, 1992.
4. French JG. Floods. In: Gregg MB, editor. The public health consequences of disasters. Atlanta: US Department of Health and Human Services, Public Health Service, CDC, 1989:39-49.
5. Deaths due to flash floods in Puerto Rico, January 1992: Implications for prevention. International Journal of Epidemiology 1994; 23(5): 968-975.

Submersion Injuries

Drowning is the sixth leading cause of unintentional injury death among Texans of all ages. Among those aged 5 through 44, drowning is the fifth leading cause of unintentional injury death; and among children less than 5 years of age, drowning is the second leading cause of unintentional injury death. Overall, since 1980, males have been 5 times as likely to drown as females.

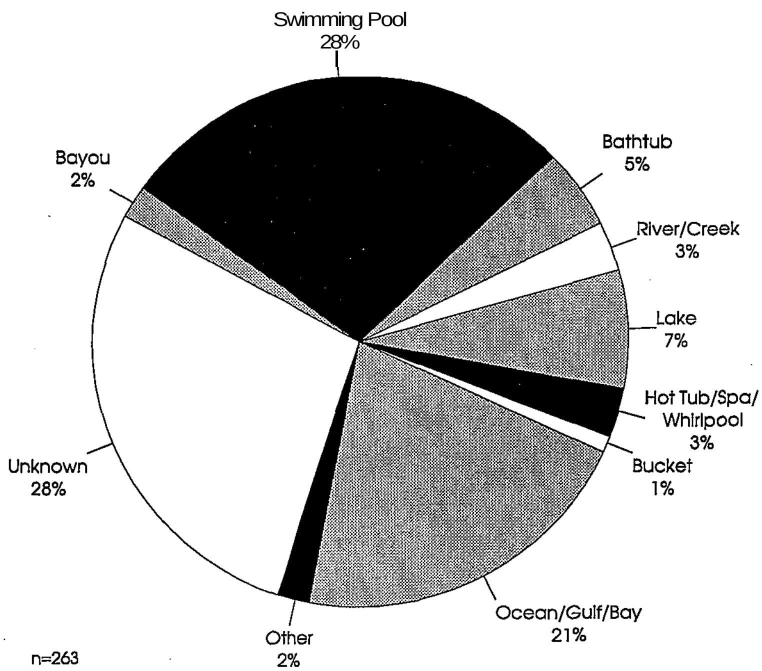
Figure 1. Drowning/Near-Drowning by Age Group



n=262

Of the 263 submersion injuries reported to the Injury Prevention and Control Program during 1995, 76 were drownings. In addition to the devastation caused by drownings, near-drownings can result in extreme, permanent cognitive and motor disability. Near-drowning is defined as survival for at least 24 hours after suffocation due to submersion in water. For each person of any age who drowned, almost 2 others (1.6) suffered a near-drowning. Among those under 5 years of age, the ratio was 1 drowning to 5 near-drownings; and among children aged 5 through 9, the ratio was 1 to 3. After age 15, more persons drowned than suffered a near-drowning.

Figure 2. Drowning/Near-Drowning



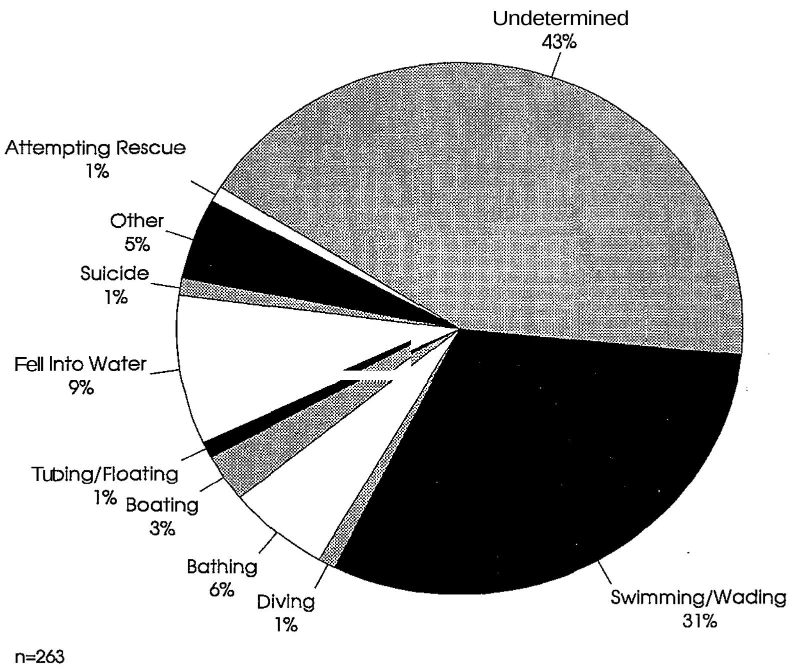
n=263

Victim ages ranged from 6 weeks to 79 years (Figure 1). The average age was 18 years. Thirty-six percent of those injured were under 5 years of age. Two-year-olds were the age group most often injured (10% of total).

Twenty-eight percent of injuries occurred in swimming pools (most often at victim's private residence) (Figure 2). Over 99% of children were unsupervised at the time of injury. Thirty-one percent of injuries occurred while the individuals were swimming/wading (Figure 3).

Ten percent of those injured had pre-existing medical conditions or physical impairments (ie, seizure disorder, cerebral palsy, mental retardation, autism, coronary artery disease).

Figure 3. Activity Preceding Drowning/ Near-Drowning



At least 10% of injuries involved alcohol or drug use. The victim's alcohol/drug involvement was unknown/undetermined for an additional 55% of the injuries.

Twenty-nine percent of those suffering submersion injuries drowned. At least 13% of persons who suffered a near-drowning eventually died from submersion-related complications. Of those surviving a near-drowning, at least 59% suffered some manner of neurologic deficit; 29% had unknown/ undetermined deficits at time of discharge. At least 16% of deficits were severe, 74% of known deficits were of unknown/undetermined severity at time of discharge.

In **53%** of incidents, nonprofessionals (ie, bystanders/rescuers) performed cardiopulmonary resuscitation at the injury scene. Ninety-four percent of the victims were treated in the hospital following submersion.

Injury Prevention and Control Program
(522) 458-7266

Tom Green County Immunization Study

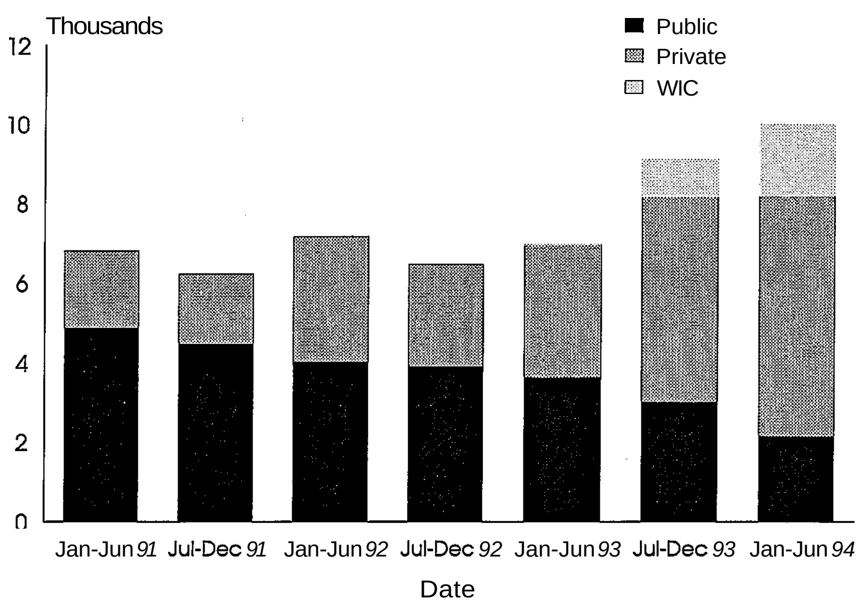
The Women, Infants and Children (WIC) immunization initiative is one of the most comprehensive of the Childhood Immunization Initiative strategies implemented in Texas to date. Approximately half of the babies born annually in Texas are eligible to receive WIC benefits. WIC provides an opportunity to reach about 400,000 Texas children younger than 5 years of age[1]. The WIC immunization initiative was piloted in El Paso in March 1993 and commenced statewide in June 1993. At the time of this study, about 50% of all WIC sites were providing immunization services.

During the summer of 1993, Early and Periodic Screening, Diagnosis and Treatment (EPSDT) well-child services in public health clinics around Texas experienced significant client dropout., This situation raised concern that EPSDT well-child clients were abandoning regular preventive care services in favor of consolidating an immunization visit with a regular WIC visit. The San Angelo-Tom Green County Health Department (SATGCHD) was chosen as the study site after EPSDT client data were reviewed and significant decreases in client services were documented.

This report summarizes three of the study objectives: to examine trends in the volume of vaccine administered in the public and private sectors; to assess the impact of the WIC immunization initiative on this dynamic; and to describe the pattern of immunization provider utilization by county clients during this period.

The Tom Green County immunization study was a retrospective cohort analysis of the immunization status at 12 months of age of two birth cohorts. Clinic clients born between April 1992 and March 1993 represented a pre-WIC immunization initiative baseline. Clients born from April 1993 to March 1994 represented the first year of the WIC initiative. All SATGCHD immunization records within the two-year birth cohort were identified (1,840 records). Every other record was assessed for immunization status (920 records). All sampled records containing WIC immunizations were identified. The CDC "Clinic Assessment Software Application" (CASA) was used to collect and analyze immunization data. Additional statistical analyses were performed with Epi Info 6.

Figure 1. Total Doses Administered, Tom Green County 1991-1994, Semi-annual by Provider Type: Age Group Younger Than 2 Years



A subsample of 310 of the 920 records (33.7%) was reviewed, and note was made of all immunization providers shown on the record. This information was used to determine the extent of multiple provider utilization. Three mutually exclusive and exhaustive groupings of records in the subsarnple were created: records with only SATGCHD clinic immunizations; records with at least one private provider immunization but no WIC immunization; and records with at least one WIC immunization. Private sector immunization providers accepting Medicaid patients were provided a copy of the list of SATGCHD clients missing at least one immunization according to the CASA assessment. Providers identified those clients currently in their practice and the client's method of payment.

Table 1. Missing immunizations By Birth Cohort Year

Year	Yes	No
1992-1993	126 (22.2%)	441 (77.8%)
1993-1994	203 (57.5%)	150 (42.5%)
Total	329 (35.8%)	591 (64.2%)

Figure 1 shows trends in the number of doses administered in Tom Green County by provider type for children under 2 years of age. During 1991-1994, there was a progressive shift in client immunization services from the public sector to the private sector. This shift began before the WIC immunization initiative commenced.

The 4-year trend in vaccine doses administered in Tom Green County demonstrated an accelerated rate of decrease in doses administered in the SATGCHD clinic beginning in January 1993 with a concomitant increase in doses administered in the private sector. (This trend was also seen statewide.) The pre-WIC initiative and WIC initiative cohorts contained 567 (61.6%) and 353 (38.4%), respectively, of the 920 records sampled. This 37.7% decline is shown in Figure 1. Client records in the 1993-94 cohort were at significantly increased risk (2.17 < RR < 3.09; 95% C.I.) of having at least one missing immunization compared with the 1992-93 cohort. Increased client migration to the private sector in this cohort could account for the higher rate of missing immunizations.

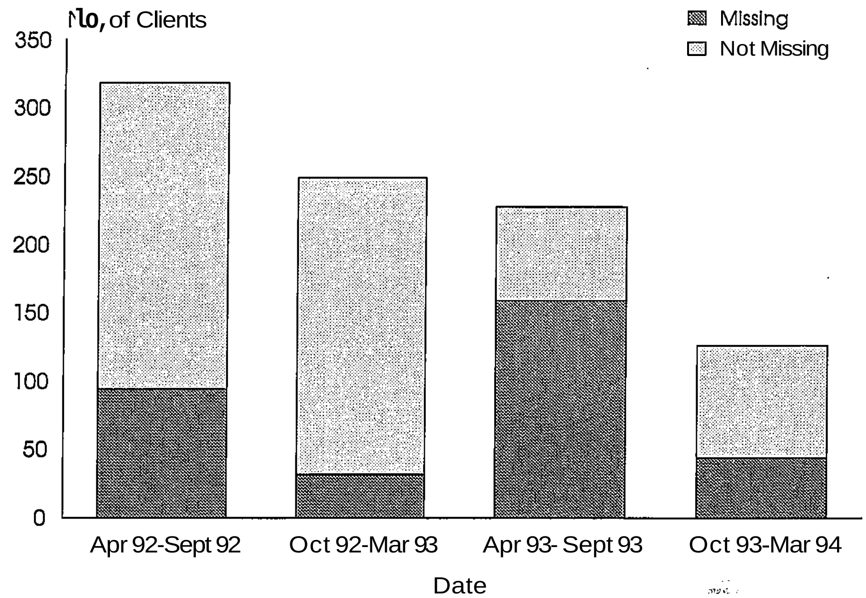
The greatest proportion of records with missing immunizations coincides with the commencement of the WIC immunization initiative (Table 1). The accelerated client migration to the private sector seen in this study area and statewide, however, is likely due to a combination of factors, including the WIC immunization initiative, an increase in the EPSDT reimbursement rate from $27.00 to $40.00 in January 1992, and a $3.00 administrative fee per vaccine effective July 1993.

At least one WIC immunization was indicated on 280 (30.4%) of the 960 records sampled; and both cohort years exhibited similar proportions of records with WIC immunizations. A cross tabulation of WIC status by missing immunization status was not significant. To test for the effect of WIC status on missing immunizations between the cohort years, these variables were again cross-tabulated, controlling for WIC status. The difference in missing immunization status between cohort years remained significant, indicating that this relationship was not correlated with WIC status. It is probable that many WIC-eligible clinic clients view the WIC immunization service as an adjunct to clinic services and utilize WIC when their schedules conflict with clinic immunization hours.

The number of SATGCHD clients missing one or more immunizations is shown in Figure 2. The 6-month period with the largest proportion of missing immunizations corresponded to the commencement of the WIC immunization initiative mid-1993.

Since immunizations are an integral part of EPSDT well-child programs, they were used as a surrogate to test the assumption that the public clinic provides a "medical home" for well-child clients. Records indicating receipt of immunizations from only the SATGCHD or the SATGCHD well-child program were considered demonstration of a "medical home." SATGCHD or its well-child program was listed as the sole provider of immunizations for 137 (44.2%) of the 310 records. Records with multiple immunization providers comprised 173 (55.8%) of the 310 records, indicating the majority of SATGCHD clients have utilized the services of at least one additional immunization provider. The four Tom Green County private clinics which accept Medicaid patients were provided a list of the 329 SATGCHD clients missing at least one immunization. Sixty-one percent (199/329) were identified as clients by private providers. A much lower percentage of records from the "Clinic only" category were identified by private sector providers than from the multiple provider categories, lending support to the assumption that clients whose records indicate multiple immunization provider utilization are less likely to view the public clinic as a medical home.

Figure 2. Missing Immunization Status, Tom Green County 1991-1994, Semi-annual, Age Group Younger Than 2 Years



References

1. TDH Bureau of WIC Nutrition. 1992-1993 Biennial Report. Austin: Texas Department of Health, 1995:12-13.

2. Goldman, DA. The EPIGRAM Computer Program for Analyzing Mortality and Population Data Sets. Public Health Reports 1994 Jan-Feb; 109:118-124.

Immunization Division (800) 252-9152

Traumatic Brain Injuries, January 1993 - December 1995

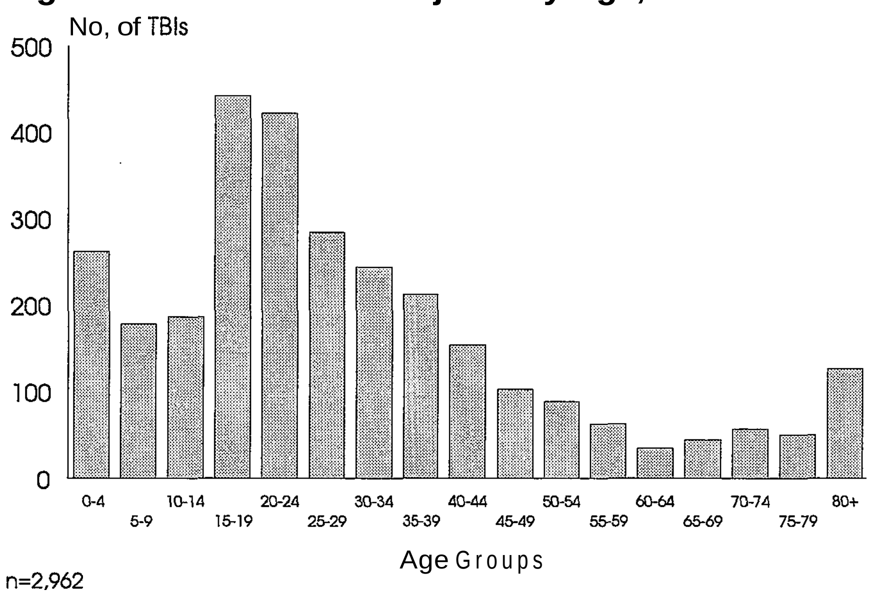
In the spring of 1993, the Injury Prevention and Control Program began working with the Texas Head Injury Association, the Alliance of Head Injury Rehabilitation Facilities, and the Southwest Regional Brain Injury Rehabilitation and Prevention Center to design and implement a traumatic brain injury (TBI) registry to collect, analyze, and report data on the occurrence of TBIs in Texas. In May of that year, 28 rehabilitation facilities agreed to participate in the surveillance project. By December, that number increased to 45 sentinels and included 39 rehabilitation facilities and 5 acute care hospitals. In the fall of 1994, program staff initiated ongoing active surveillance at 38 hospitals in Public Health Region 7 (Central Texas) to obtain more accurate population-based data.

A case of traumatic brain injury is defined as damage to living brain tissue caused by an external, mechanical force. It is usually Characterized by a period of altered consciousness (amnesia or coma) that can be very brief (minutes) or very long (months/indefinitely). The specific disabling conditions(s) may be orthopedic, visual, aural, neurologic, perceptive/cognitive, or mental/emotional in nature. These injuries can be intentional (eg, assault, suicide) or unintentional (eg, car crashes, most falls). The case definition does **not** include brain injuries that are caused by insufficient blood supply, insufficient oxygen, toxic substances, malignancy, disease-producing organisms, congenital disorders, birth trauma, or degenerative processes.

The following ICD-9 or ICD-9-CM diagnostic codes may be used to identify **possible cases** of traumatic head injury:

800.0-801.9	Fracture of the vault or base of the skull
803.0-804.9	Other and unqualified and multiple fractures of the skull
850.0-854.1	Intracranial injury, including concussion, contusion, laceration, and hemorrhage

Figure 1. Traumatic Brain Injuries by Age, 1993-1995

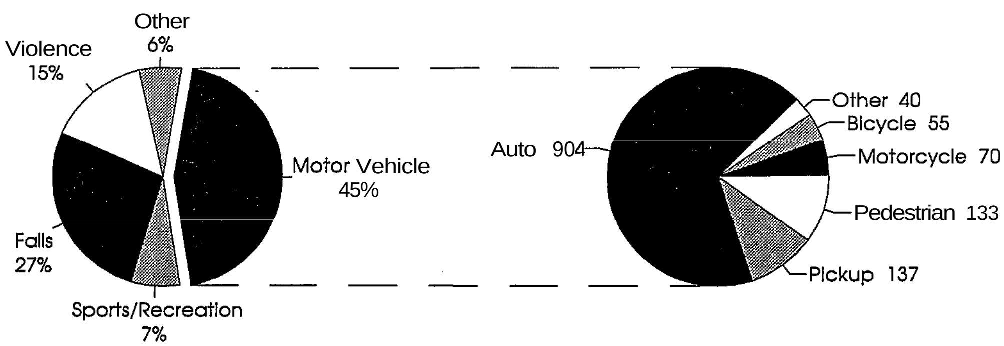


n=2,962
"Voluntary reporting

From 1993 through 1995, 2,962 traumatic brain injuries (TBIs) were reported to the Injury Prevention and Control Program. Of the 2,962 injured persons, 1,948 (66%) were male. Males continue to be twice as likely to sustain TBIs than are females. The racial/ethnic distribution of the cases was as follows: 2,010 (69%) white, 593 (20%) Hispanic, 297 (10%) black, 23 (less than 1%) Asian/other, and 39 (1%) unknown race. Although the ages ranged from 17 days to almost 102 years, 76% of the patients were under 40 years of age, the mean age being 29.6 years (Figure 1).

The type of head injury was reported for 2,918 patients. The vast majority (2,741/2,918; 94%) of the TBIs were "closed head injuries." There were 109 (4%) reported as "open head injury, penetrating" and 68 (2%), as "open head injury, non-penetrating."

Figure 2. Traumatic Brain Injuries by Etiology, 1993-1995



n=2,962
Voluntary reporting

Severity of injury was reported for 2,861 patients. Fifty-eight percent (1,654/2,861) sustained mild TBIs, 553 (19%) sustained moderate TBIs, and 654 (23%) sustained severe TBIs.

Intentionality was reported for 2,834 patients; 438 (15%) injuries were categorized as "intentional." Of these. 51 were self-inflicted: Etiologies included the following: 338 assaults, 75 GSWs, 8 falls, 12 motor-vehicle related injuries, and 5 "other" injuries (including 1 injury during a boxing match). Child abuse was suspected in at least 32 of the above cases.

Etiologically, 1,339 (45%) of the injuries were motor-vehicle related (Figure 2). These cases involved 904 individuals injured in automobiles, 137 in pickup trucks, 70 on motorcycles, 55 on bicycles, 40 involving miscellaneous vehicles, and 133 pedestrians (Figure 3). Information on seat belt and helmet use was known for 1,032 cases in which such safety equipment could have been used. In over half (602/1032; 58%) of these cases, the individuals were reported as NOT having used appropriate safety equipment, (eg, seat belts, child seats, airbags, or helmets).

The etiologies of the 1,623 injuries that did not involve motor vehicles were as follows: 797 (27%) due to falls, 447 (15%) due to violence [95 gunshot wounds (GSWs), 352 assaults other than GSWs (including at least 32 cases of child abuse)], 213 (7%) due to sports and recreation, and 166 (6%) due to blunt trauma or unknown causes.

Information about alcohol and drug involvement was reported for 2,336 (79%) and 2,091 (71%) of the patients, respectively. Twenty-eight percent of these cases (653/2,336) were alcohol-related; 80% of these patients were male. Nine percent of these cases (197/2,091) were drug-related; 76% of these patients were male. The drug-related cases primarily involved the use of marijuana (86), cocaine (67), and benzodiazepine (51). Multiple-drug use was reported for 55 (28%) of the 197 drug-related injuries.

Injuries involving alcohol were 2.2 times more likely to be severe than those that did not involve alcohol ($p<.0001$; CI=1.8, 2.6). Similarly, those involving drug use were 2.0 times more likely to be severe ($p<0.0001$; CI=1.5, 2.8) than those that did not involve drug use. In addition, males were 2.6 times ($p<0.0001$; CI=2.1, 3.2) more likely to have had alcohol-related injuries and 1.9 times ($p=0.0002$, CI=1.3, 2.7) more likely to have had drug-related injuries than were females.

Information on whether the injury occurred on the job was reported for 2,725 (92%) individuals; 220 (8%) sustained work-related injuries. Over half (55%) of these injuries were due to falls (121). In addition, 49 were due to blunt or falling objects, 30 to motor vehicles, 14 to assaults and GSWs, and 6 to other causes. Males sustained 81% of the work-related injuries.

Three fourths (2,188; 74%) of the patients were discharged to their homes: 59% to self care, 8% to family/non-skilled assistance, and 7% to home health or out-patient rehabilitation. Fifteen percent (442 patients) were discharged to other health care facilities and 127 (4%) to "other" or "unknown." Of the reported injuries, 205 (7%) were fatal.

The cost of care for each reported admission to a hospital or rehabilitation facility was reported for 1,510/2,962 (51%) of the patients. Charges ranged from $43 to $6161,734, with an average cost of $27,508 per single admission: $19,235 per acute care admission and $57,583 per rehabilitation admission.

Figure 3. Pedestrian TBI Facts

- Head injuries sustained by pedestrians struck by motor vehicles were almost twice as likely to be severe than those head injuries due to other causes. These patients were nearly four times as likely to have sustained additional severe injuries as well.

- 49% of the reported head-injured pedestrians over age 21 sustained alcohol-related injuries. One minor (aged 15) was also intoxicated at the time of injury. Eight percent of the reported head-injured pedestrians sustained drug-related injuries.

- On average, head-injured pedestrians tended to be somewhat younger than other TBI patients (26 years versus 30 years) and involved a higher percentage of males (71% versus 66%). Distribution by race/ethnicity was proportional to the general, statewide population.

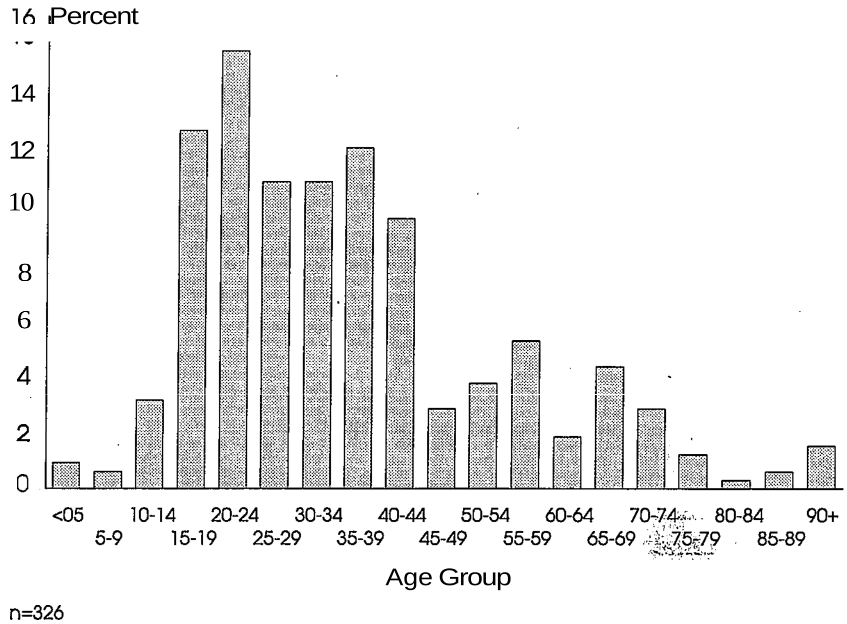
- No distinct temporal pattern was evident.

Pedestrian TBIs were irregularly distributed throughout the year and ranged from 12.0% in June to 3.8% in December. They were also irregularly distributed throughout the week, ranging from 18% and 19% on Tuesday and Friday, respectively, to 10% on Sunday.

Injury Prevention and Control Program
(512) 458-7266

Traumatic Spinal Cord Injuries

Figure 1. Percent of Spinal Cord Injuries by Age Group



Since January 1994, traumatic spinal cord injury (SCI) reporting has been mandatory. Assuming that Texans are injured at the same rate as other US citizens, approximately half of all Texas SCIs are reported to the SCI Surveillance Program. Since reporting is more complete from larger cities and metropolitan areas, biases might result from differences in population structure of urban versus rural populations.

From January through December 1995, 326 SCIs were reported to the Texas Department of Health's Injury prevention and Control Program. Twenty-six (8%) patients died during treatment in the hospital, and 90 (28%) entered long-term rehabilitation programs. The average length of stay for acute-care hospital patients was 14 days (median of 9 days).

Ages ranged from 3 months to 89 years (median of 32 years). People under 30 years' of age accounted for 145 (44%) of injured Texans (Figure 1). Forty-five (14%) of the injured were 18 years of age and younger. Males accounted for 254 (78%) of the total injured. The racial/ethnic distribution of injuries is as follows: 192 (59%) white, 72 (22%) Hispanic, 49 (15%) African American, 7 (2%) Asian,' and 6 (2%) Other/Unknown.

Motor-vehicle-related (MV) injuries accounted for 157 (48%) of SCIs to Texans (Figure 2). Among these, 114 (73%) individuals were injured as automobile occupants, 17 as occupants in pickup truck cabs, 12 in motorcycle crashes, 9 in pedestrian-vehicle crashes, 2 in bicycle-vehicle crashes, and 2 in off-road recreational vehicle crashes.

Safety belts, child restraints, airbags or helmets were not used in at least 36% of MV-related spinal cord injuries. Restraint use was unknown in an additional 19% of injuries.

As Figure 2 illustrates, other mechanisms accounted for the remaining 169 (52%) injuries. Among these, 61.(36%) were due to assault, 64 (38%) due to falls, 26 (15%) due to sports, and 5 (3%) due to falling objects. Overall, gunshots accounted for 10% of SCIs. Gunshots accounted for 72% of assaults.

Intent of injury was known for 306 (94%) of the incidents. Ten percent of these were assaults and 1% were suicides.

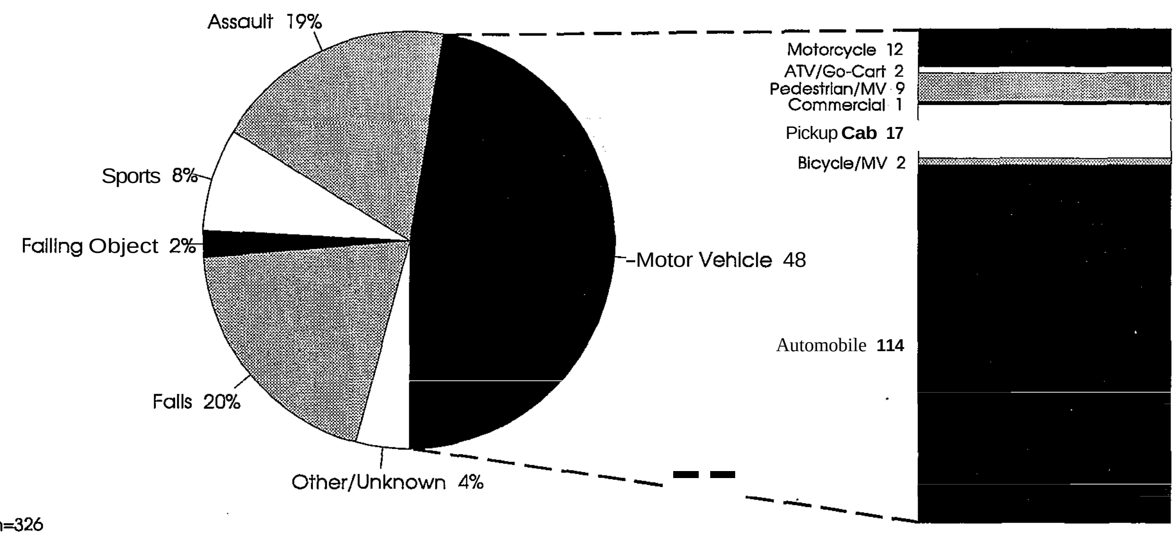
Ninety-four (29%) injuries were reported as alcohol or drug-related (ie, alcohol or drugs was involved in the injury, but was not necessarily consumed by the victim). The victim's alcohol or drug involvement was unknown/undetermined for an additional 58% of injuries.

Information concerning job-related injuries was available for 288 (88%) of the cases. Of these, 45 (16%) were job-related. Twenty-five (56%) of the victims received an injury as the result of a fall, 3 (7%) were injured by lifting objects, and 3 (7%) were injured by falling objects.

Information on type and extent of injury was available for 315 (97%) of the cases. Of these, 124 (39%) resulted in paraplegia, and 191 (61%) resulted in quadriplegia. The most severely injured persons (ie, those sustaining injuries to spinal cord in the neck resulting in total loss of sensation and movement below the injury) accounted for 107 (34%) cases of known severity.

Since the beginning of the voluntary traumatic spinal cord injury surveillance effort in January 1991, about 1,600 Texans have been reported to the Texas Department of Health's Injury Prevention and Control Program. Motor-vehicle-related crashes account for 48% of SCIs, while gunshots account for 18% of SCIs. Seventy-seven percent of all SCIs occur to males.

Figure 2. Spinal Cord Injuries by Etiology



n=326

Injury Prevention and Control Program
(512) 458-7266

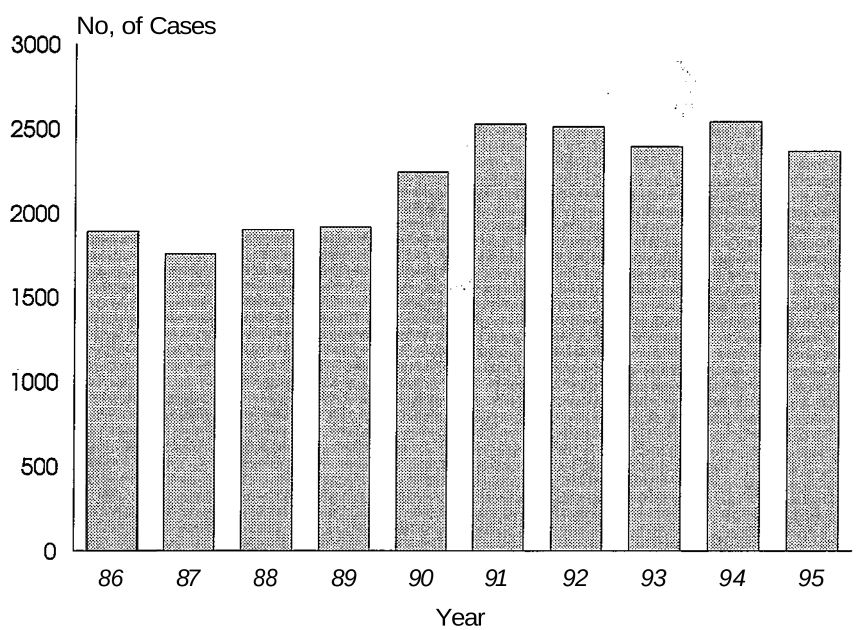
Tuberculosis

Mycobacterium tuberculosis is an acid-fast bacillus that causes tuberculosis (TB). Transmission occurs when a person with infectious TB talks, sneezes, or coughs, and another person inhales the airborne droplet nuclei. Risk factors include residence in a community where TB is prevalent, homelessness, substance abuse, incarceration, and certain medical conditions such as human immunodeficiency virus (HIV) infection or diabetes.

Cases of TB reported in Texas in 1995 reflected a 7% decrease from those reported in 1994: 2,369 (12.7 per 100,000 population) versus 2,542 cases (13.9 per 100,000 population). Of the 1,450 TB cases reported in 1995, 61% were reported in the 7 cities in Texas with populations greater than 250,000. Houston alone accounted for 739 (31%) TB cases in 1995. In 1994,705 were reported from Houston. Dallas ranked second with 222 (9.4%) cases and San Antonio was third with 125 (5.3%) cases. TB cases in Texas accounted for approximately 10% of the 22,860 cases reported in the United States in 1995.

From 1970 through 1980, the decrease in Texas reported TB cases averaged 3%. Had this decline continued, the number of TB cases reported for 1995 would have been close to 1,400. The increase in reported cases that began in the mid-1980s continued through 1994, when the number of cases reached a 20-year high of 2,542.

Figure 1. Tuberculosis Cases, 1986-1995



Timely reporting of TB is essential. Texas law as amended in 1994 requires that all cases of suspected or confirmed TB be reported to the Texas Department of Health (TDH). In addition, TB infection in children under 15 years of age must be reported. In 1995, this age group accounted for 193 tuberculosis cases, a 21% decrease from the 233 cases reported for this group in 1994. These cases occurred primarily in Hispanic and African American children. Adults 25 to 44 years of age account for 914 (39%) of the total cases and also are the most likely source of transmission of TB infection to children.

Of the 1995 Texas cases, 621 (26%) of the patients were foreign born. Almost all were from areas with high levels of TB infection. Individuals born in Mexico accounted for 384 of the Texas cases (16% of the total, 62% of the cases among foreign-born TB patients). The remaining foreign-born TB patients came from 44 countries, including Vietnam (84), the Phillippines (21), India (15), South Korea (14), Honduras (12), and El Salvador (11). One-third of the world's population is estimated to be infected with TB. These persons will continue to be at risk of developing TB disease and thus become sources of infection for others.

To meet the ongoing challenge of TB transmission linked to foreign-born populations, the TB Elimination Division has developed the Binational TB

Program. Among its key activities are enhanced TB surveillance and control activities along the Texas-Mexico border, directly observed therapy (DOT), contact investigations, and sputum collection with appropriate laboratory testing.

The Binational Migrant Tracking System (TB-NET) is a tuberculosis referral network in the United States and Mexico that helps prevent treatment interruption for mobile TB patients by facilitating information exchange among clinics. A portable record of a migrant patient's TB treatment history is available for the patient to present to clinic staff when seeking treatment.

The large number of individuals worldwide who have infectious active TB continue to put others in their communities at risk. Factors that contribute to this situation are delay in diagnosis, subsequent delay in initiating treatment, time necessary for completion of effective therapy, and difficulty in ensuring compliance with the treatment regimen. Individuals infected with TB are at risk of active disease for the remainder of their lives. Although risk of disease is highest soon after infection, the greatest number of new cases in a population come from individuals infected many years prior to the onset of illness.

Table 1. Tuberculosis in Children <15 and Total Reported Cases: Texas, 1986-1995

	86	*87*	*88*	*89*	*90*	*91*	*92*	*93*	*94*	*95*
Cases in Children < 15	117	120	127	109	187	212	218	163	233	193
Total Cases	1890	1757	1901	1915	2242	2525	2510	2393	2542	2369

HIV/AIDS was one of the leading risk factors for TB cases reported in 1995. In 1988, persons co-infected with TB and HIV represented 5.5% of reported TB cases. In 1993, the AIDS case definition was revised to include HIV-infected persons who have either pulmonary or extrapulmonary TB. Extensive matching between the two case registers revealed that 10.5% of all reported TB cases in 1995 were also found to have HIV/AIDS.

It is clear that preventing TB transmission to new hosts is an essential element of an effective elimination strategy. The conventional TB control strategy focuses primarily on two efforts:

- **Identify cases and maintain patients on appropriate therapy to prevent recurrence and transmission of disease.**
- **Identify recently infected persons or infected persons who are at high risk of developing disease and maintain them on appropriate therapy to prevent progression to disease.**

Drug-resistant TB is one of the greatest challenges facing TB control efforts. A TB strain resistant to both isoniazid (INH) and rifampin (RIF) is classified as multi-drug resistant TB (MDR-TB) Persons infected with MDR-TB can remain infectious for many years, because TB treatment without the use of INH or RIF is costly and very difficult. In 1994,136 new cases of drug resistant TB were reported in Texas. In 1995, of the 127 reported cases of drug-resistant tuberculosis, 76 (60%) were resistant to one drug while 51 (40%) of cases were resistant to two or more drugs.

There were 13 new cases of MDR-TB reported (0.7% of culture-positive TB cases), the lowest number reported since MDR-TB case reporting began in 1987. Ten (77%)of the new cases were in foreign-born patients. Of these, 9 were from Mexico and 1 from Vietnam; 7 patients reported previous TB therapy in their countries of origin. This reduction in drug-resistant TB is attributed to increased surveillance of difficult cases, consultation with MDR-TB experts, and widespread implementation of DOT.

DOT requires that each dose of medication be taken while the patient is observed by a responsible person. DOT can be accomplished whether the patient receives medication at a clinic, in a hospital, at home, in jail, or even "on the street." Of the 2,213 TB cases under treatment management in 1992, only 10% were on DOT. In 1993, the percent on DOT increased to 35%; in 1994, to 67%; and in 1995, to 82%. Overall, these proportions represent an increase of 77% from 1992 to 1995. This treatment protocol is expected to shorten the length of therapy, decrease the occurrence of secondary MDR-TB, and decrease the number of days patients remain infectious. The goal for 1996 is to increase to 87% the proportion of patients with confirmed and suspected TB disease that is managed with DOT.

Texas TB cases and case rates in 1995 decreased from the 20-year high in 1994. This decrease is attributed to the widespread use of standard 4-drug therapy, DOT, and an increased emphasis on institutional control measures in correctional facilities and hospitals. Although this trend is expected to continue, tuberculosis will remain a serious health problem in certain Texas populations: the urban poor, HIV-infected individuals, immigrants from areas with high TB rates, the homeless, and substance abusers. These populations contain a large number of individuals infected with TB who are at risk for developing active disease.

The Tuberculosis Elimination Division is developing new approaches for TB control and prevention activities in Texas. These efforts include expanding contact investigations and networking with community-based organizations to reach high-risk populations. In cooperation with the Texas Department of Health Microbiology Laboratory, a DNA fingerprinting laboratory is being established to identify clusters of related TB cases and examine TB transmission patterns. The shared goal of all these efforts is to improve the ability to break the chain of transmission and prevent the occurrence of new TB cases.

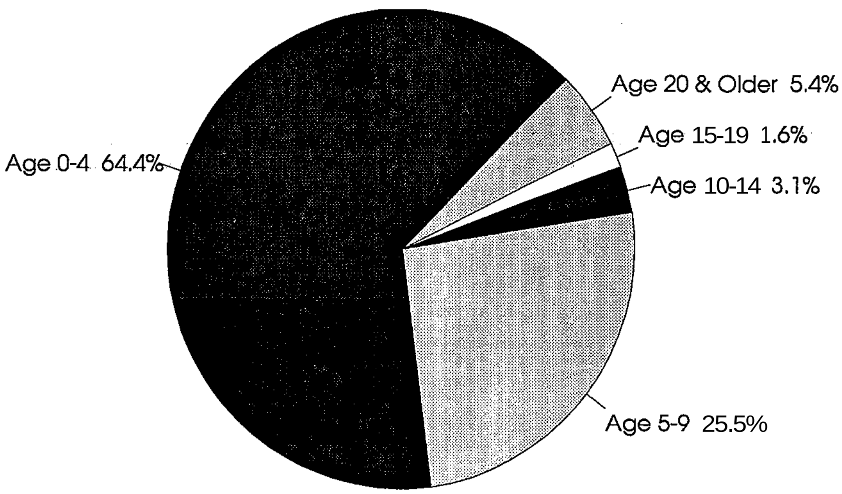
Tuberculosis Elimination Division (512)458-7448

Varicella Surveillance Project

Varicella (chickenpox) is a highly contagious, viral disease which affects virtually all people in the United States by adulthood. In late 1994, the Texas Department of Health (TDH) received funding from the Centers for Disease Control and Prevention (CDC) to monitor varicella disease trends in Travis County prior to and after licensure of varicella vaccine. In 1995, the varicella surveillance project collected information on over 3,100 cases of varicella.

The majority (64.4%) of cases occurred in children 0 to 4 years of age (Figure 1). Children 5 to 9 years of age were the next largest age group reported, accounting for 25.5% of all varicella cases. Adults 20 years of age and older comprised 5.4% of the total varicella cases. Varicella morbidity is divided virtually equally between the sexes, with 52% of cases occurring in males and 48% in females. Whites accounted for the majority (80.8%) of cases, followed by blacks (13.3%) and Asians (3.9%). Those of Hispanic ethnicity comprised 27% of varicella cases. This percentage is comparable with 1990 census data for Travis County.

Figure 1. Varicella Cases by Age



All patients with varicella experienced rashes. The majority of patients judged their lesions as mild to moderate in severity. Only 13% of the patients had lesions so numerous as to be judged as severe (more than 250 lesions). The duration of rash averaged 6.3 days. Over 65% of all patients also reported fever, with a mean duration of 2.5 days.

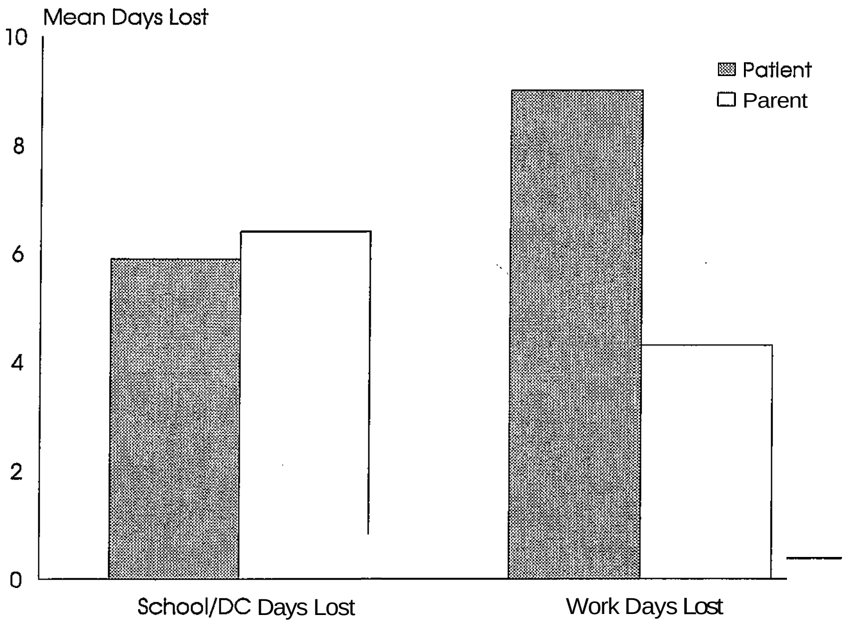
Nearly 12% of all patients with varicella reported complications. The most commonly reported complication was otitis media. Smaller numbers reported severe headaches and/or changes in mental status and secondary skin infection. Several patients reported upper respiratory tract infections, conjunctivitis, secondary bacterial infections, and pneumonia. Other serious complications included hemorrhagic varicella (2 patients), septicemia (2 patients), and encephalitis (1 patient). Varicella pneumonia was the cause of death for 1 patient: a 22-year old man with preexisting cardiac problems and Down's Syndrome.

Nearly 22% of varicella patients were treated with prescription medications. Acyclovir was the most frequently prescribed drug. Other commonly prescribed antibiotics included ampicillin, Augmentin®, Ceclor®, and Duricef®. Atarax was the most commonly prescribed anti-itch medication.

Children missed an average of 5.9 school or daycare days, and parents lost an average of 6.4 school days or 4.3 work days to care for a child with varicella. Adults were absent from work 9 days on average due to varicella illness (Figure 2).

The varicella vaccine was licensed for use on March 17,1995, and was available for purchase in the private sector beginning May 1,1995. Infor-

Figure 2. Mean Days Lost to Varicella Illness



mation regarding varicella immunization status is obtained on all reported cases of varicella. Of the 3,152 patients with varicella in 1995, 20 had been vaccinated. ,Of these, 19 had rash onset 1 to 21 days after vaccination, and are thought to have been vaccinated after exposure to active varicella illness. One patient had onset of varicella 4 months after vaccination, and his illness is considered a "break-through" case.

Varicella is a common childhood illness, with virtually all people in the United States acquiring it by adulthood. Although most people have a relatively mild course of illness, complications such as encephalitis and even death are possible. The economic burden of varicella is not trivial. The costs in the United States associated with varicella have been estimated to be approximately $400 million per year. The advent of a new vaccine is expected to bring about reduced mordibity and mortality, with a coincident reduction* the economic burden caused by this common illness. Continued study of this illness by the Varicella Surveillance Project will provide the Texas Department of Health with the opportunity to study changes in the epidemiology of varicella as the vaccine is introduced to the community.

Immunization Division (800) 252-9152

Viral Gastroenteritis: Outbreak in El Paso

In February 1995, 4 persons were admitted over a 12-hour period to a hospital in El Paso with complaints of nausea, vomiting, diarrhea, headache, chills, sweats, dry mouth, blurred vision, double vision, and difficulty swallowing. Because they had recently consumed a meal together, and because their symptoms were unusual, the admitting physician suspected foodborne botulism. Botulism antitoxin was given to the 2 most severely ill patients, who were admitted to the intensive care unit for observation. The other 2 patients were admitted to step-down units.

The 4 patients, aged 22 to 24 years, were friends but lived in separate households. In the 3 days prior to illness onset, they had shared only 1 meal, a take-out order of hamburgers from a restaurant. Five other persons had also eaten the meal. Only 1 of the 5 had symptoms, and her illness was much milder than that of the 4 hospitalized patients. Queso was the only food item shared by those who became ill (the 4 hospitalized patients and the person with mild symptoms). The 4 persons who ate hamburgers, but no queso, did not have any symptoms.

Stool and serum samples from the 4 hospitalized patients were tested at the TDH laboratory; samples of left over queso from the restaurant and other foods left over from the implicated meal were also tested. All specimens tested negative for botulism toxin.

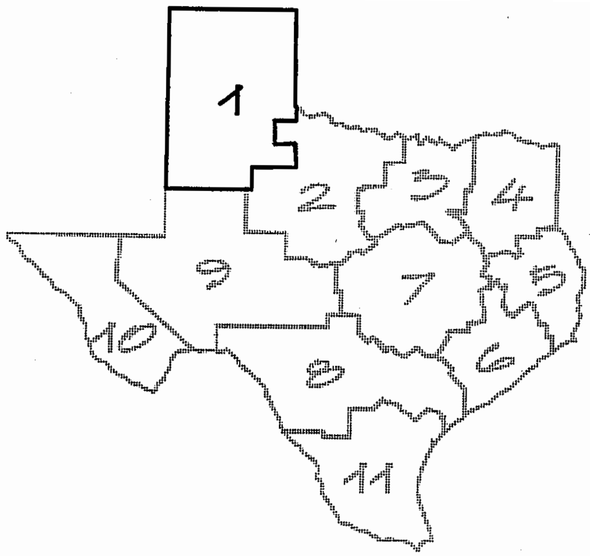
However, stool samples from 2 of the patients were positive for ECHO virus 31, and a stool sample from a third hospitalized patient was noted by electron microscopy to have 28-nanometer particles, consistent with ECHO 31. The other hospitalized patients' stools tested negative for viruses. Additionally, the ill person who was not hospitalized had a 28-nm viral particle noted in stool by electron microscopy.

No other ill persons were found through a search of emergency room and hospital records. All the patients recovered completely within a week.

This outbreak of viral gastroenteritis illustrates the difficulties inherent in investigating suspected foodborne botulism outbreaks. The patients had symptoms clinically consistent with botulism, which is a public health emergency. Swift action must be taken, despite the fact that laboratory confirmation of botulism often takes several days. This outbreak also demonstrates that ECHO viruses and other enteroviruses are capable of causing neurological symptoms similar to those of botulism and should be included in the differential diagnosis. Electron microscopy should be performed on stool specimens for suspected botulism patients.

Infectious Disease Epidemiology and Surveillance Division (512) 458-7676

REGIONAL STATISTICAL SUMMARIES



PUBLIC HEALTH REGION 1

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 1 - 1995

COUNTY	1995 POP.	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS C CASES	HEPATITIS C RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
ARMSTRONG	1,995	0	0.0	0	0.0	0	0.0	0	0.0
BAILN	7,229	0	0.0	0	0.0	0	0.0	0	0.0
BRISCOE	1.932	0	0.0	0	0.0	0	0.0	0	0.0
CARSON	6,503	0	0.0	0	0.0	0	0.0	0	0.0
CASTRO	9.309	3	32.2	0	0.0	0	0.0	0	0.0
CHILDRESS	6,679	0	0.0	0	0.0	0	0.0	0	0.0
COCHRAN	4,611	0	0.0	0	0.0	0	0.0	0	0.0
COLLINGSWORTH	3,474	0	0.0	0	0.0	0	0.0	0	0.0
CROSBY	7,439	1	13.4	0	0.0	0	0.0	0	0.0
DALLAM	5,463	2	36.6	2	36.6	0	0.0	0	0.0
DEAF SMITH	19,655	1	5.1	1	5.1	0	0.0	0	0.0
DICKENS	2,506	1	39.9	0	0.0	0	0.0	0	0.0
DONLEY	3,547	0	0.0	0	0.0	0	0.0	0	0.0
FLOYD	8,611	1	11.6	0	0.0	1	11.6	0	0.0
GARZA	5,195	3	57.7	1	19.2	0	0.0	0	0.0
GRAY	23.610	2	8.5	6	25.4	2	8.5	0	0.0
HALE	35,830	7	19.5	2	5.6	0	0.0	0	0.0
HALL	3.748	1	26.7	0	0.0	0	0.0	0	0.0
HANSFORD	5,845	0	0.0	0	0.0	0	0.0	0	0.0
HARTLEY	4,550	0	0.0	0	0.0	0	0.0	0	0.0
HEMPHILL	3,673	0	0.0	0	0.0	0	0.0	0	0.0
HOCKLN	24,404	1	4.1	1	4.1	0	0.0	0	0.0
HUTCHINSON	25.145	0	0.0	0	0.0	0	0.0	0	0.0
KING	369	0	0.0	0	0.0	0	0.0	0	0.0
LAMB	14,784	4	27.1	0	0.0	0	0.0	0	0.0
LIPSCOMB	3.101	0	0.0	0	0.0	0	0.0	0	0.0
LUBBOCK	226.337	16	7.1	7	3.1	5	2.2	0	0.0
LYNN	6,803	0	0.0	0	0.0	0	0.0	0	0.0
MOORE	18,426	38	206.2	2	10.9	1	5.4	0	0.0
MOTLEY	1.482	0	0.0	0	0.0	0	0.0	0	0.0
OCHILTREE	9,091	0	0.0	0	0.0	0	0.0	0	0.0
OLDHAM	2,245	1	44.5	0	0.0	0	0.0	0	0.0
PARMER	10,169	0	0.0	0	0.0	0	0.0	0	0.0
POTTER	102,380	38	37.1	41	40.0	1	1.0	0	0.0
RANDALL	99,559	3	3.0	1	1.0	0	0.0	0	0.0
ROBERTS	1,021	0	0.0	0	0.0	0	0.0	0	0.0
SHERMAN	2,909	0	0.0	0	0.0	0	0.0	0	0.0
SWISHER	8,642	0	0.0	0	0.0	0	0.0	1	11.6
TERRY	13,936	1	7.2	2	14.4	0	0.0	0	0.0
WHEELER	5,584	0	0.0	0	0.0	0	0.0	0	0.0
YOAKUM	9,131	8	87.6	2	21.9	0	0.0	0	0.0
REGIONAL TOTALS	756.922	132	17.4	68	9.0	10	1.3	1	0.1
STATEWIDE TOTALS	18,617,441	3,001	16.1	1,211	6.5	340	1.8	67	0.4

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

PUBLIC HEALTH REGION 1 - 1995

		AMEBIASIS		CAMPYLOBACTER		SALMONELLOSIS		SHIGELLOSIS	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ARMSTRONG	1,995	0	0.0	1	50.1	1	50.1	0	0.0
BAILEY	7,229	0	0.0	0	0.0	2	27.7	3	41.5
BRISCOE	1,932	0	0.0	0	0.0	0	0.0	0	0.0
CARSON	6,503	0	0.0	1	15.4	1	15.4	2	30.8
CASTRO	9,309	0	0.0	1	10.7	0	0.0	0	0.0
CHILDRESS	6,679	0	0.0	0	0.0	0	0.0	2	29.9
COCHRAN	4,611	0	0.0	0	0.0	0	0.0	0	0.0
COLLINGSWORTH	3,474	0	0.0	2	57.6	0	0.0	0	0.0
CROSBY	7,439	0	0.0	1	13.4	1	13.4	8	107.5
DALLAM	5,463	0	0.0	0	0.0	1	18.3	0	0.0
DEAF SMITH	19,655	0	0.0	6	30.5	6	30.5	4	20.4
DICKENS	2,506	0	0.0	1	39.9	0	0.0	0	0.0
DONLEY	3,547	0	0.0	0	0.0	0	0.0	0	0.0
FLOYD	8,611	0	0.0	0	0.0	1	11.6	0	0.0
GARZA	5,195	0	0.0	0	0.0	1	19.2	2	38.5
GRAY	23,610	0	0.0	1	4.2	2	8.5	1	4.2
HALE	35,830	0	0.0	2	5.6	13	36.3	11	30.7
HALL	3,748	0	0.0	0	0.0	1	26.7	0	0.0
HANSFORD	5,845	0	0.0	0	0.0	0	0.0	0	0.0
HARTLEY	4,550	0	0.0	1	22.0	0	0.0	0	0.0
HEMPHILL	3,673	0	0.0	0	0.0	0	0.0	0	0.0
HOCKLEY	24,404	0	0.0	0	0.0	1	4.1	0	0.0
HUTCHINSON	25,145	0	0.0	0	0.0	4	15.9	0	0.0
KING	369	0	0.0	0	0.0	0	0.0	0	0.0
LAMB	14,784	0	0.0	2	13.5	2	13.5	3	20.3
LIPSCOMB	3,101	0	0.0	0	0.0	0	0.0	0	0.0
LUBBOCK	226,337	1	0.4	40	17.7	55	24.3	22	9.7
LYNN	6.803	0	0.0	0	0.0	0	0.0	0	0.0
MOORE	18.426	0	0.0	0	0.0	2	10.9	14	76.0
MOTLEY	1,482	0	0.0	0	0.0	0	0.0	0	0.0
OCHILTREE	9,091	0	0.0	0	0.0	0	0.0	0	0.0
OLDHAM	2,245	0	0.0	0	0.0	0	0.0	0	0.0
PARMER	10,169	0	0.0	0	0.0	1	9.8	0	0.0
POTTER	102,380	0	0.0	22	21.5	45	44.0	34	33.2
RANDALL	99,559	0	0.0	0	0.0	2	2.0	1	1.0
ROBERTS	1,021	0	0.0	0	0.0	0	0.0	0	0.0
SHERMAN	2,909	0	0.0	0	0.0	0	0.0	0	0.0
SWISHER	8,642	0	0.0	2	23.1	4	46.3	1	11.6
TERRY	13,936	0	0.0	0	0.0	2	14.4	1	7.2
WHEELER	5,584	0	0.0	2	35.8	2	35.8	0	0.0
YOAKUM	9.131	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	756,922	1	0.1	85	11.2	150	19.8	109	14.4
STATEWIDETOTALS	118,617,441	118	0.6	993	5.3	2,363	12.7	3.017	16.2

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

PUBLIC HEALTH REGION 1 - 1995

COUNN	1995 POP.	ASEPTIC MENINGITIS		CHICKENPOX		ENCEPHALITIS		TUBERCULOSIS	
		CASES	RATE	CASES	'RATE	CASES	RATE	CASES	RATE
ARMSTRONG	1.995	0	0.0	0	0.0	0	0.0	0	0.0
BAILEY	7,229	0	0.0	32	442.7	0	0.0	0	0.0
BRISCOE	1.932	0	0.0	14	724.6	0	0.0	0	0.0
CARSON	6.503	0	0.0	0	0.0	0	0.0	0	0.0
CASTRO	9,309	0	0.0	10	107.4	0	0.0	0	0.0
CHILDRESS	6.679	0	0.0	0	0.0	0	0.0	0	0.0
COCHRAN	4.611	0	0.0	0	0.0	0	0.0	0	0.0
COLLINGSWORTH	3,474	0	0.0	0	0.0	0	0.0	1	28.8
CROSBY	7.439	1	13.4	32	430.2	0	0.0	0	0.0
DALLAM	5,463	0	0.0	0	0.0	0	0.0	1	18.3
DEAF SMITH	19,655	1	5.1	12	61.1	0	0.0	2	10.2
DICKENS	2,506	0	0.0	0	0.0	0	0.0	0	0.0
DONLEY	3,547	0	0.0	0	0.0	0	0.0	0	0.0
FLOYD	8,611	0	0.0	24	278.7	0	0.0	4	46.5
GARZA	5,195	0	0.0	0	0.0	1	19.2	0	0.0
GRAY	23,610	0	0.0	0	0.0	0	0.0	0	0.0
HALE	35,830	0	0.0	80	223.3	0	0.0	6	0.0
HALL	3.748	0	0.0	0	0.0	0	0.0	0	0.0
HANSFORD	5.845	0	0.0	0	0.0	0	0.0	0	0.0
HARTLEY	4.550	0	0.0	0	0.0	0	0.0	0	0.0
HEMPHILL	3,673	0	0.0	24	653.4	0	0.0	'1	27.2
HOCKLEY	24,404	1	4.1	0	0.0	0	0.0	1	4.1
HUTCHINSON	25.145	0	0.0	0	0.0	1	4.0	1	4.0
KING	369	0	0.0	0	0.0	0	0.0	0	0.0
LAMB	14,784	0	0.0	0	0.0	0	0.0	0	0.0
LIPSCOMB	3,101	0	0.0	1	32.2	0	0.0	0	0.0
LUBBOCK	226,337	20	8.8	758	334.9	0	0.0	14	6.2
LYNN	6,803	0	0.0	0	0.0	0	0.0	0	0.0
MOORE	18,426	0	0.0	0	0.0	0	0.0	2	10.9
MOTLEY	1,482	0	0.0	0	0.0	0	0.0	0	0.0
OCHILTREE	9,091	1	11.0	0	0.0	0	0.0	1	11.0
OLDHAM	2,245	0	0.0	0	0.0	0	0.0	0	0.0
PARMER	10,169	1	9.8	0	0.0	0	0.0	1	9.8
POTTER	102,380	14	13.7	287	280.3	2	2.0	15	14.7
RANDALL	99,559	2	2.0	10	10.0	1	1.0	4	4.0
ROBERTS	1.021	0	0.0	0	0.0	0	0.0	0	0.0
SHERMAN	2,909	0	0.0	0	0.0	0	0.0	0	0.0
SWISHER	8,642	0	0.0	3	34.7	0	0.0	0	0.0
TERRY	13,936	0	0.0	0	0.0	0	0.0	2	14.4
WHEELER	5,584	0	0.0	6	107.5	0	0.0	0	0.0
YOAKUM	9,131	0	0.0	1	11.0	0	0.0	0	0.0
REGIONAL TOTALS	756,922	41	5.4	1,294	171.0	5	0.7	50	6.6
STATEWIDE TOTALS	18,617,441	1,566	8.4	22,568	121.2	71	0.4	2,369	12.7

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

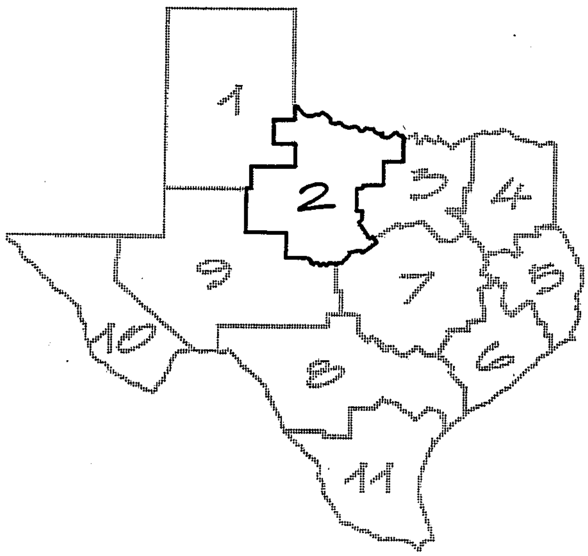
PUBLIC HEALTH REGION 1 - 1995

		MEASLES		MUMPS		PERTUSSIS		RUBELLA	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ARMSTRONG	1,995	0	0.0	0	0.0	0	0.0	0	0.0
BAILEY	7,229	0	0.0	0	0.0	0	0.0	0	0.0
BRISCOE	1,932	0	0.0	0	0.0	0	0.0	0	0.0
CARSON	6,503	0	0.0	0	0.0	0	0.0	0	0.0
CASTRO	9,309	0	0.0	0	0.0	0	0.0	2	21.5
CHILDRESS	6.679	0	0.0	0	0.0	0	0.0	0	0.0
COCHRAN	4,611	0	0.0	0	0.0	0	0.0	0	0.0
COLLINGSWORTH	3,474	0	0.0	0	0.0	0	0.0	0	0.0
CROSBY	7,439	0	0.0	0	0.0	0	0.0	0	0.0
DALLAM	5,463	0	0.0	0	0.0	0	0.0	0	0.0
DEAF SMITH	19,655	0	0.0	0	0.0	0	0.0	0	0.0
DICKENS	2.506	0	0.0	0	0.0	0	0.0	0	0.0
DONLEY	3,547	0	0.0	0	0.0	0	0.0	0	0.0
FLOYD	8.611	0	0.0	0	0.0	0	0.0	0	0.0
GARZA	5,195	0	0.0	0	0.0	0	0.0	0	0.0
GRAY	23,610	0	0.0	0	0.0	0	0.0	0	0.0
HALE	35,830	0	0.0	0	0.0	0	0.0	0	0.0
HALL	3,748	0	0.0	0	0.0	0	0.0	0	0.0
HANSFORD	5,845	0	0.0	0	0.0	0	0.0	0	0.0
HARTLEY	4,550	0	0.0	0	0.0	0	0.0	0	0.0
HEMPHILL	3,673	0	0.0	0	0.0	0	0.0	0	0.0
HOCKLEY	24,404	0	0.0	0	0.0	0	0.0	0	0.0
HUTCHINSON	25,145	0	0.0	0	0.0	0	0.0	0	0.0
KING	369	0	0.0	0	0.0	0	0.0	0	0.0
LAMB	14,784	0	0.0	0	0.0	0	0.0	0	0.0
LIPSCOMB	3,101	0	0.0	0	0.0	0	0.0	0	0.0
LUBBOCK	226,337	0	0.0	0	0.0	3	1.3	0	0.0
LYNN	6,803	0	0.0	0	0.0	0	0.0	0	0.0
MOORE	18,426	0	0.0	0	0.0	0	0.0	0	0.0
MOTLEY	1,482	0	0.0	0	0.0	0	0.0	0	0.0
OCHILTREE	9,091	0	0.0	0	0.0	2	22.0	0	0.0
OLDHAM	2,245	0	0.0	0	0.0	0	0.0	0	0.0
PARMER	10,169	0	0.0	0	0.0	2	19.7	0	0.0
POTTER	102,380	0	0.0	1	1.0	0	0.0	0	0.0
RANDALL	99,559	0	0.0	0	0.0	1	1.0	0	0.0
ROBERTS	1,021	0	0.0	0	0.0	0	0.0	0	0.0
SHERMAN	2,909	0	0.0	0	0.0	0	0.0	0	0.0
SWISHER	8,642	0	0.0	0	0.0	0	0.0	0	0.0
TERRY	13,936	0	0.0	0	0.0	1	7.2	0	0.0
WHEELER	5,584	0	0.0	0	0.0	0	0.0	0	0.0
YOAKUM	9,131	0	0.0	0	0.0	1	11.0	0	0.0
REGIONAL TOTALS	756,922	0	0.0	1	0.1	10	1.3	2	0.3
STATEWIDE TOTALS	18,617,441	14	0.1	43	0.2	217	1.2	8	0.0

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

PUBLIC HEALTH REGION 1 - 1995

COUNTY	1995 POP.	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P & S SYPHILIS CASES	P & S SYPHILIS RATE
ARMSTRONG	1,995	5	250.6	3	150.4	0	0.0
BAILEY	7,229	13	179.8	4	55.3	0	0.0
BRISCOE	1,932	0	0.0	0	0.0	0	0.0
CARSON	6,503	2	30.8	1	15.4	0	0.0
CASTRO	9,309	30	322.3	7	75.2	0	0.0
CHILDRESS	6,679	20	299.4	12	179.7	0	0.0
COCHRAN	4,611	4	86.7	1	21.7	0	0.0
COLLINGSWORTH	3,474	6	172.7	3	86.4	0	0.0
CROSBY	7.439	27	363.0	3	40.3	0	0.0
DALLAM	5,463	23	421.0	0	0.0	0	0.0
DEAF SMITH	19,655	86	437.5	13	66.1	0	0.0
DICKENS	2,506	12	478.9	3	119.7	0	0.0
DONLEY	3.547	10	281.9	3	84.6	0	0.0
FLOYD	8.611	10	116.1	1	11.6	0	0.0
GARZA	5,195	17	327.2	2	38.5	0	0.0
GRAY	23,610	54	228.7	29	122.8	1	4.2
HALE	35,830	133	371.2	63	175.8	0	0.0
HALL	3,748	7	186.8	5	133.4	0	0.0
HANSFORD	5,845	4	68.4	0	0.0	0	0.0
HARTLEY	4,550	0	0.0	0	0.0	0	0.0
HEMPHILL	3,673	1	27.2	0	0.0	0	0.0
HOCKLEY	24.404	42	172.1	21	86.1	1	4.1
HUTCHINSON	25,145	60	238.6	18	71.6	0	0.0
KING	369	0	0.0	0	0.0	0	0.0
LAMB	14,784	30	202.9	10	67.6	0	0.0
LIPSCOMB	3,101	0	0.0	0	0.0	0	0.0
LUBBOCK	226.337	1,154	509.9	593	262.0	4	1.8
LYNN	6,803	14	205.8	5	73.5	0	0.0
MOORE	18,426	47	255.1	4	21.7	0	0.0
MOTLEY	1.482	3	202.4	0	0.0	0	0.0
OCHILTREE	9,091	30	330.0	5	55.0	0	0.0
OLDHAM	2,245	3	133.6	1	44.5	0	0.0
PARMER	10,169	7	68.8	0	0.0	0	0.0
POTTER	102.380	711	694.5	387	378.0	5	4.9
RANDALL	99.559	185	185.8	84	84.4	0	0.0
ROBERTS	1,021	0	0.0	0	0.0	0	0.0
SHERMAN	2,909	1	34.4	2	68.8	0	0.0
SWISHER	8,642	43	497.6	15	173.6	0	0.0
TERRY	13,936	48	344.4	11	78.9	0	0.0
WHEELER	5.584	9	161.2	6	107.5	0	0.0
YOAKUM	9,131	19	208.1	2	21.9	0	0.0
REGIONAL TOTALS	756,922	2,870	379.2	1,317	174.0	11	1.5
STATEWIDE TOTALS	18.617.441	44,738	240.3	30,893	165.9	1.557	8.4



PUBLIC HEALTH REGION 2

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 2 - 1995

		HEPATITIS A		HEPATITIS		HEPATITIS		HEPATITIS UNSPECIFIED	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ARCHER	8,172	0	0.0	0	0.0	0	0.0	0	0.0
BAYLOR	4,225	0	0.0	0	0.0	0	0.0	0	0.0
BROWN	34,251	7	20.4	8	23.4	1	2.9	0	0.0
CALLAHAN	11,912	0	0.0	0	0.0	2	16.8	0	0.0
CLAY	10,008	0	0.0	0	0.0	0	0.0	0	0.0
COLEMAN	9,386	3	32.0	0	0.0	0	0.0	0	0.0
COMANCHE	13,230	0	0.0	1	7.6	0	0.0	0	0.0
COTTLE	2,189	0	0.0	0	0.0	0	0.0	0	0.0
EASTLAND	17,882	0	0.0	1	5.6	2	11.2	0	0.0
FISHER	4,713	0	0.0	0	0.0	0	0.0	0	0.0
FOARD	1,752	0	0.0	0	0.0	0	0.0	0	0.0
HARDEMAN	5.111	0	0.0	0	0.0	0	0.0	0	0.0
HASKELL	6,653	1	15.0	0	0.0	1	15.0	0	0.0
JACK	6,899	1	14.5	0	0.0	1	14.5	0	0.0
JONES	18.202	0	0.0	0	0.0	1	5.5	0	0.0
KENT	1.010	0	0.0	0	0.0	0	0.0	0	0.0
KNOX	4,754	0	0.0	0	0.0	0	0.0	0	0.0
MITCHELL	9.786	1	10.2	0	0.0	0	0.0	0	0.0
MONTAGUE	16,586	4	24.1	0	0.0	0	0.0	0	0.0
NOLAN	16,744	0	0.0	3	17.9	2	11.9	0	0.0
RUNNELS	11,289	3	26.6	0	0.0	0	0.0	0	0.0
SCURRY	18,770	1	5.3	1	5.3	0	0.0	0	0.0
SHACKELFORD	3.229	0	0.0	0	0.0	0	0.0	0	0.0
STEPHENS	9,242	4	43.3	0	0.0	1	10.8	0	0.0
STONEWALL	1,980	0	0.0	0	0.0	0	0.0	0	0.0
TAYLOR	123.745	8	6.5	3	2.4	10	8.1	0	0.0
THROCKMORTON	1,857	0	0.0	0	0.0	0	0.0	0	0.0
WICHITA	126,653	4	3.2	5	3.9	17	13.4	0	0.0
WILBARGER	15,161	0	0.0	2	13.2	0	0.0	0	0.0
YOUNG	17,570	0	0.0	2	11.4	0	0.0	0	0.0
REGIONAL TOTALS	532,961	37	6.9	26	4.9	38	7.1	0	0.0
STATEWIDE TOTALS	18,617,441	3,001	16.1	1.211	6.5	340	1.8	67	0.4

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

PUBLIC HEALTH REGION 2 - 1995

COUNTY	1995 POP.	AMEBIASIS CASES	AMEBIASIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE
ARCHER	8,172	0	0.0	1	12.2	1	12.2	1	12.2
BAYLOR	4,225	0	0.0	0	0.0	1	23.7	2	47.3
BROWN	34,251	0	0.0	0	0.0	1	2.9	1	2.9
CALLAHAN	11,912	0	0.0	0	0.0	0	0.0	0	0.0
CLAY	10,008	0	0.0	1	10.0	0	0.0	0	0.0
COLEMAN	9,386	0	0.0	0	0.0	0	0.0	1	10.7
COMANCHE	13,230	0	0.0	0	0.0	1	7.6	1	7.6
COTTLE	2,189	0	0.0	0	0.0	0	0.0	0	0.0
EASTLAND	17,882	0	0.0	0	0.0	1	5.6	0	0.0
FISHER	4,713	0	0.0	0	0.0	0	0.0	0	0.0
FOARD	1,752	0	0.0	0	0.0	0	0.0	3	171.2
HARDEMAN	5,111	0	0.0	0	0.0	0	0.0	45	880.5
HASKELL	6,653	0	0.0	0	0.0	0	0.0	0	0.0
JACK	6,899	0	0.0	1	14.5	0	0.0	0	0.0
JONES	18,202	0	0.0	1	5.5	1	5.5	4	22.0
KENT	1,010	0	0.0	0	0.0	0	0.0	0	0.0
KNOX	4,754	0	0.0	0	0.0	0	0.0	1	21.0
MITCHELL	9,786	0	0.0	0	0.0	0	0.0	0	0.0
MONTAGUE	16,586	0	0.0	1	6.0	5	30.1	0	0.0
NOLAN	16,744	0	0.0	0	0.0	1	6.0	6	35.8
RUNNELS	11,289	0	0.0	4	35.4	2	17.7	5	44.3
SCURRY	18,770	0	0.0	0	0.0	3	16.0	12	63.9
SHACKELFORD	3,229	0	0.0	0	0.0	0	0.0	0	0.0
STEPHENS	9,242	0	0.0	0	0.0	2	21.6	0	0.0
STONEWALL	1,980	0	0.0	0	0.0	0	0.0	0	0.0
TAYLOR	123,745	1	0.8	12	9.7	22	17.8	34	27.5
THROCKMORTON	1,857	0	0.0	0	0.0	0	0.0	0	0.0
WICHITA	126,653	0	0.0	8	6.3	14	11.1	13	10.3
WILBARGER	15,161	0	0.0	0	0.0	2	13.2	5	33.0
YOUNG	17,570	0	0.0	2	11.4	5	28.5	0	0.0
REGIONAL TOTALS	532,961	1	0.2	31	5.8	62	11.6	134	25.1
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2,363	12.7	3,017	16.2

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

PUBLIC HEALTH REGION 2 - 1995

		ASEPTIC MENINGITIS		CHICKENPOX		ENCEPHALITIS		TUBERCULOSIS	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ARCHER	8,172	0	0.0	5	61.2	0	0.0	0	0.0
BAYLOR	4,225	0	0.0	0	0.0	0	0.0	0	0.0
BROWN	34,251	0	0.0	4	11.7	0	0.0	2	5.8
CALLAHAN	11.912	1	8.4	0	0.0	0	0.0	1	8.4
CLAY	10,008	0	0.0	0	0.0	0	0.0	0	0.0
COLEMAN	9,386	0	0.0	0	0.0	0	0.0	0	0.0
COMANCHE	13,230	0	0.0	7	52.9	0	0.0	1	7.6
CORLE	2.189	0	0.0	0	0.0	0	0.0	0	0.0
EASTLAND	17.882	1	5.6	0	0.0	0	0.0	0	0.0
FISHER	4,713	0	0.0	0	0.0	0	0.0	0	0.0
FOARD	1,752	0	0.0	0	0.0	0	0.0	0	0.0
HARDEMAN	5,111	0	0.0	5	97.8	0	0.0	0	0.0
HASKELL	6,653	0	0.0	0	0.0	0	0.0	0	0.0
JACK	6,899	0	0.0	0	0.0	0	0.0	1	14.5
JONES	18,202	2	11.0	19	104.4	0	0.0	0	0.0
KENT	1,010	0	0.0	0	0.0	0	0.0	0	0.0
KNOX	4.754	0	0.0	0	0.0	0	0.0	1	21.0
MITCHELL	9,786	0	0.0	0	0.0	0	0.0	0	0.0
MONTAGUE	16,586	0	0.0	0	0.0	0	0.0	0	0.0
NOLAN	16,744	1	6.0	8	47.8	0	0.0	0	0.0
RUNNELS	11,289	0	0.0	5	44.3	0	0.0	0	0.0
SCURRY	18.770	1	5.3	7	37.3	0	0.0	0	0.0
SHACKELFORD	3.229	0	0.0	0	0.0	0	0.0	0	0.0
STEPHENS	9.242	1	10.8	0	0.0	0	0.0	1	10.8
STONEWALL	1.980	0	0.0	0	0.0	0	0.0	0	0.0
TAYLOR	123,745	19	15.4	224	181.0	3	2.4	4	3.2
THROCKMORTON	1,857	0	0.0	0	0.0	0	0.0	0	0.0
WICHITA	126,653	5	3.9	73	57.6	0	0.0	13	10.3
WILBARGER	15,161	0	0.0	0	0.0	0	0.0	0	0.0
YOUNG	17,570	2	11.4	15	85.4	0	0.0	0	0.0
REGIONAL TOTALS	532,961	33	6.2	372	69.8	3	0.6	24	4.5
STATEWIDE TOTALS	18,617,441	1,566	8.4	22,568	121.2	71	0.4	2,369	12.7

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

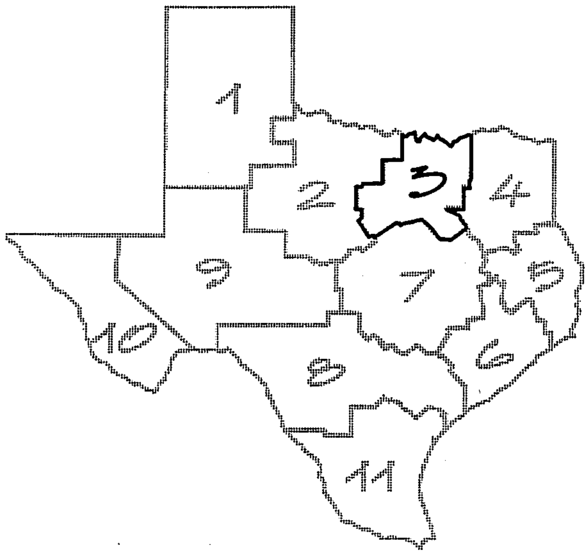
PUBLIC HEALTH REGION 2 - 1995

COUNTY	1995 POP.	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
ARCHER	8,172	0	0.0	0	0.0	0	0.0	0	0.0
BAYLOR	4,225	0	0.0	0	0.0	0	0.0	0	0.0
BROWN	34,251	0	0.0	0	0.0	0	0.0	0	0.0
CALLAHAN	11,912	0	0.0	0	0.0	1	8.4	0	0.0
CLAY	10,008	0	0.0	0	0.0	0	0.0	0	0.0
COLEMAN	9,386	0	0.0	0	0.0	0	0.0	0	0.0
COMANCHE	13,230	0	0.0	0	0.0	0	0.0	0	0.0
COTTLE	2,189	0	0.0	0	0.0	0	0.0	0	0.0
EASTLAND	17,882	0	0.0	0	0.0	0	0.0	0	0.0
FISHER	4,713	0	0.0	0	0.0	0	0.0	0	0.0
FOARD	1,752	0	0.0	0	0.0	0	0.0	0	0.0
HARDEMAN	5,111	0	0.0	0	0.0	0	0.0	0	0.0
HASKELL	6,653	0	0.0	0	0.0	0	0.0	0	0.0
JACK	6,899	0	0.0	0	0.0	1	14.5	0	0.0
JONES	18,202	0	0.0	0	0.0	1	5.5	0	0.0
KENT	1,010	0	0.0	0	0.0	0	0.0	0	0.0
KNOX	4,754	0	0.0	0	0.0	0	0.0	0	0.0
MITCHELL	9,786	0	0.0	0	0.0	0	0.0	0	0.0
MONTAGUE	16,586	0	0.0	0	0.0	0	0.0	0	0.0
NOLAN	16,744	0	0.0	0	0.0	0	0.0	0	0.0
RUNNELS	11,289	0	0.0	0	0.0	1	8.9	0	0.0
SCURRY	18,770	0	0.0	0	0.0	0	0.0	0	0.0
SHACKELFORD	3,229	0	0.0	0	0.0	0	0.0	0	0.0
STEPHENS	9,242	0	0.0	0	0.0	0	0.0	0	0.0
STONEWALL	1.980	0	0.0	0	0.0	0	0.0	0	0.0
TAYLOR	123.745	0	0.0	0	0.0	4	3.2	0	0.0
THROCKMORTON	1,857	0	0.0	0	0.0	0	0.0	0	0.0
WICHITA	126,653	0	0.0	1	0.8	0	0.0	0	0.0
WILBARGER	15,161	0	0.0	0	0.0	0	0.0	0	0.0
YOUNG	17.570	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	532.961	0	0.0	1	0.2	8	1.5	0	0.0
STATEWIDE TOTALS	18,617,441	14	0.1	43	0.2	217	1.2	8	0.0

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

PUBLIC HEALTH REGION 2 - 1995

COUNTY	1995 POP.	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P & S SYPHILIS CASES	P & S SYPHILIS RATE
ARCHER	8,172	2	24.5	3	36.7	0	0.0
BAYLOR	4,225	2	47.3	1	23.7	0	0.0
BROWN	34,251	99	289.0	33	96.3	0	0.0
CALLAHAN	11,912	5	42.0	0	0.0	0	0.0
CLAY	10,008	3	30.0	0	0.0	0	0.0
COLEMAN	9.386	20	213.1	2	21.3	0	0.0
COMANCHE	13,230	15	113.4	1	7.6	0	0.0
COTTLE	2,189	8	365.5	3	137.0	0	0.0
EASTLAND	17,882	16	89.5	5	28.0	0	0.0
FISHER	4,713	1	21.2	2	42.4	0	0.0
FOARD	1,752	2	114.2	0	0.0	0	0.0
HARDEMAN	5.111	13	254.4	4	78.3	0	0.0
HASKEU	6,653	4	60.1	5	75.2	0	0.0
JACK	6.899	4	58.0	0	0.0	0	0.0
JONES	18,202	11	60.4	8	44.0	0	0.0
KENT	1,010	0	0.0	0	0.0	0	0.0
KNOX	4,754	4	84.1	2	42.1	0	0.0
MITCHELL	9,786	6	61.3	2	20.4	0	0.0
MONTAGUE	16,586	10	60.3	4	24.1	1	6.0
NOLAN	16,744	63	376.3	65	388.2	0	0.0
RUNNELS	11,289	5	44.3	2	17.7	0	0.0
SCURRY	18,770	48	255.7	37	197.1	0	0.0
SHACKELFORD	3,229	1	31.0	0	0.0	0	0.0
STEPHENS	9.242	10	108.2	4	43.3	0	0.0
STONNVAU	1,980	0	0.0	0	0.0	0	0.0
TAYLOR	123.745	353	285.3	175	141.4	0	0.0
THROCKMORTON	1,857	0	0.0	0	0.0	0	0.0
WICHITA	126,653	483	381.4	380	300.0	2	1.6
WILBARGER	15.161	12	79.2	10	66.0	0	0.0
YOUNG	17,570	24	136.6	1	5.7	0	0.0
REGIONAL TOTALS	532,961	1,224	229.7	749	140.5	3	0.6
STATEWIDE TOTALS	18,617,441	44,738	240.3	30,893	165.9	1,557	8.4



PUBLIC HEALTH REGION 3

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 3 - 1995

COUNTY	1995 POP.	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS C CASES	HEPATITIS C RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
COLLIN	338,752	45	13.3	23	6.8	7	2.1	0	0.0
COOKE	31,601	37	117.1	0	0.0	3	9.5	0	0.0
DALLAS	2,019,133	254	12.6	152	7.5	19	0.9	2	0.1
DENTON	341,257	50	14.7	23	6.7	6	1.8	0	0.0
ELLIS	101,963	10	9.8	8	7.8	1	1.0	0	0.0
ERATH	30,015	2	6.7	1	3.3	0	0.0	0	0.0
FANNIN	26.716	1	3.7	2	7.5	0	0.0	0	0.0
GRAYSON	96,349	51	52.9	8	8.3	2	2.1	0	0.0
HOOD	35,424	1	2.8	1	2.8	0	0.0	0	0.0
HUNT	69,415	7	10.1	1	1.4	0	0.0	0	0.0
JOHNSON	115,939	7	6.0	4	3.5	0	0.0	0	0.0
KAUFMAN	61,499	4	6.5	2	3.3	1	1.6	0	0.0
NAVARRO	41,734	4	9.6	0	0.0	0	0.0	0	0.0
PALO PINTO	25,965	0	0.0	3	11.6	0	0.0	0	0.0
PARKER	78,649	6	7.6	6	7.6	1	1.3	0	0.0
ROCKWALL	32,654	1	3.1	1	3.1	1	3.1	0	0.0
SOMERVELL	5,891	2	34.0	0	0.0	0	0.0	0	0.0
TARRANT	1,351,773	198	14.6	131	9.7	29	2.1	2	0.1
WISE	39,003	2	5.1	3	7.7	0	0.0	1	2.6
REGIONAL TOTALS	4,843,732	682	14.1	369	7.6	70	1.4	5	0.1
STATEWIDE TOTALS	18,617,441	3,001	16.1	1,211	6.5	340	1.8	67	0.4

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

PUBLIC HEALTH REGION 3 - 1995

COUNTY	1995 POP.	AMEBIASIS CASES	AMEBIASIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE
COLLIN	338.782	2	0.6	3	0.9	18	5.3	23	6.8
COOKE	31,601	0	0.0	0	0.0	1	3.2	0	0.0
DALLAS	2,019,133	31	1.5	115	5.7	172	8.5	325	16.1
DENTON	341,257	2	0.6	10	2.9	23	6.7	8	2.3
ELLIS	101,963	0	0.0	4	3.9	10	9.8	23	22.8
ERATH	30,015	0	0.0	0	0.0	5	16.7	4	13.3
FANNIN	26,716	0	0.0	0	0.0	1	3.7	1	3.7
GRAYSON	96,349	0	0.0	2	2.1	6	6.2	5	5.2
HOOD	35.424	0	0.0	0	0.0	3	8.5	1	2.8
HUNT	69,415	1	1.4	1	1.4	8	11.5	18	25.9
JOHNSON	115.939	0	0.0	3	2.6	5	4.3	2	1.7
KAUFMAN	61,499	0	0.0	4	6.5	0	0.0	1	1.6
NAVARRO	41,734	0	0.0	5	12.0	1	2.4	1	2.4
PALO PINTO	25,965	0	0.0	0	0.0	3	11.6	1	3.9
PARKER	78,649	0	0.0	1	1.3	7	8.9	1	1.3
ROCKWALL	32.654	0	0.0	0	0.0	0	0.0	1	3.1
SOMERVELL	5,891	0	0.0	0	0.0	2	34.0	1	17.0
TARRANT	1,351,773	0	0.0	40	3.0	84	6.2	184	13.6
WISE	39.003	0	0.0	0	0.0	2	5.1	0	0.0
REGIONAL TOTALS	4,843,732	36	0.7	188	3.9	351	7.2	600	12.4
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2,363	12.7	3,017	16.2

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

PUBLIC HEALTH REGION 3 - 1995

COUNTY	1995 POP.	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	CHICKENPOX CASES	CHICKENPOX RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
COLLIN	338,752	28	8.3	647	191.0	0	0.0	11	3.2
COOKE	31,601	0	0.0	0	0.0	0	0.0	0	0.0
DALLAS	2,019,133	219	10.8	741	36.7	22	1.1	276	13.7
DENTON	341,257	18	5.3	608	178.2	1	0.3	5	1.5
ELLIS	101,963	3	2.9	28	27.5	0	0.0	3	2.9
ERATH	30.015	2	6.7	3	10.0	0	0.0	3	10.0
FANNIN	26,716	0	0.0	0	0.0	0	0.0	0	0.0
GRAYSON	96,349	7	7.3	63	65.4	0	0.0	1	1.0
HOOD	35,424	4	11.3	46	129.9	0	0.0	0	0.0
HUNT	69,415	3	4.3	59	85.0	0	0.0	4	5.8
JOHNSON	115,939	9	7.8	9	7.8	0	0.0	1	0.9
KAUFMAN	61.499	5	8.1	1	1.6	1	1.6	3	4.9
NAVARRO	41,734	0	0.0	22	52.7	0	0.0	3	7.2
PALO PINTO	25,965	0	0.0	0	0.0	0	0.0	2	7.7
PARKER	78,649	3	3.8	0	0.0	0	0.0	1	1.3
ROCKWALL	32,654	2	6.1	4	12.3	0	0.0	1	3.1
SOMERVELL	5,891	0	0.0	0	0.0	0	0.0	0	0.0
TARRANT	1,351,773	178	13.2	1,480	109.5	1	0.1	130	9.6
WISE	39,003	4	10.3	0	0.0	0	0.0	1	2.6
REGIONAL TOTALS	4,843,732	485	10.0	3,711	76.6	25	0.5	445	9.2
STATEWIDE TOTALS	18,617,441	1,566	8.4	22,568	121.2	71	0.4	2,369	12.7

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

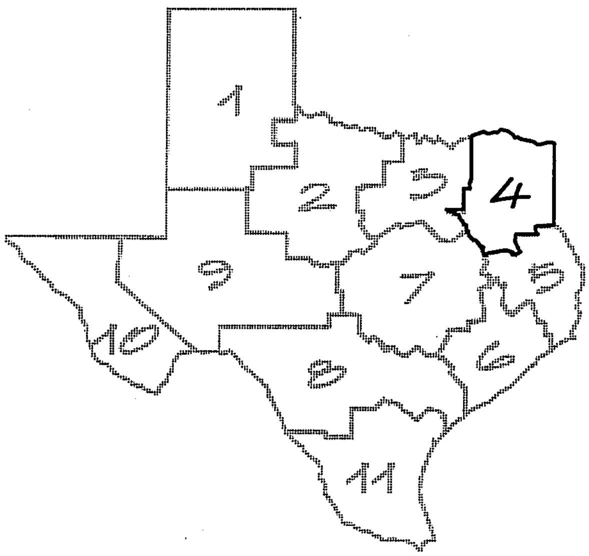
PUBLIC HEALTH REGION 3 - 1995

COUNTY	1995 POP.	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
COLLIN	338,752	0	0.0	0	0.0	1	0.3	0	0.0
COOKE	31,601	0	0.0	0	0.0	0	0.0	0	0.0
DALLAS	2,019,133	0	0.0	3	0.1	0	0.0	2	0.1
DENTON	341,257	0	0.0	1	0.3	6	1.8	1	0.3
ELLIS	101,963	0	0.0	0	0.0	2	2.0	0	0.0
ERATH	30,015	0	0.0	0	0.0	0	0.0	0	0.0
FANNIN	26,716	0	0.0	0	0.0	0	0.0	0	0.0
GRAYSON	96,349	0	0.0	0	0.0	0	0.0	0	0.0
HOOD	35,424	0	0.0	0	0.0	0	0.0	0	0.0
HUNT	69,415	0	0.0	0	0.0	0	0.0	0	0.0
JOHNSON	115,939	0	0.0	0	0.0	1	0.9	0	0.0
KAUFMAN	61,499	0	0.0	0	0.0	1	1.6	0	0.0
NAVARRO	41,734	0	0.0	0	0.0	0	0.0	0	0.0
PALO PINTO	25,965	0	0.0	0	0.0	0	0.0	0	0.0
PARKER	78,649	0	0.0	0	0.0	0	0.0	0	0.0
ROCKWALL	32,654	0	0.0	0	0.0	0	0.0	0	0.0
SOMERVELL	5,891	0	0.0	0	0.0	0	0.0	0	0.0
TARRANT	1,351,773	0	0.0	2	0.1	12	0.9	1	0.1
WISE	39,003	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	4,843,732	0	0.0	6	0.1	23	0.5	4	0.1
STATEWIDE TOTALS	18,617,441	14	0.1	43	0.2	217	1.2	8	0.0

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

PUBLIC HEALTH REGION 3 - 1995

		CHLAMYDIA		GONORRHEA		P & S SYPHILIS	
COUNN	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE
COLLIN	338.752	260	76.8	123	36.3	1	0.3
COOKE	31,601	45	142.4	24	75.9	0	0.0
DALLAS	2,019,133	5,117	253.4	8,029	397.6	268	13.3
DENTON	341.257	366	107.3	193	56.6	1	0.3
ELLIS	101,963	141	138.3	. 72	70.6	4	3.9
ERATH	30.015	67	223.2	7	23.3	0	0.0
FANNIN	26.716	44	164.7	29	108.5	0	0.0
GRAYSON	96,349	254	263.6	160	166.1	2	2.1
HOOD	35.424	40	112.9	8	22.6	0	0.0
HUNT	69.415	152	219.0	119	171.4	2	2.9
JOHNSON	115,939	146	125.9	38	32.8	4	3.5
KAUFMAN	61,499	110	178.9	35	56.9	1	1.6
NAVARRO	41,734	152	364.2	64	153.4	1	2.4
PALO PINTO	25.965	43	165.6	4	15.4	0	0.0
PARKER	78,649	48	61.0	18	22.9	0	0.0
ROCKWALL	32,654	13	39.8	7	21.4	1	3.1
SOMERVELL	5.891	5	84.9	1	17.0	0	0.0
TARRANT	1,351,773	2.541	188.0	2.443	180.7	140	10.4
WISE	39.003	38	97.4	7	17.9	0	0.0
REGIONAL TOTALS	4,843,732	9,582	197.8	11,381	235.0	425	8.8
STATEWIDE TOTALS	18,617,441	44,738	240.3	30,893	165.9	1,557	8.4



PUBLIC HEALTH REGION 4

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 4 - 1995

		HEPATITIS A		HEPATITIS B		HEPATITIS C		HEPATITIS UNSPECIFIED	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ANDERSON	51,095	7	13.7	1	2.0	0	0.0	0	0.0
BOWIE	85.574	6	7.0	5	5.8	1	1.2	0	0.0
CAMP	10,327	1	9.7	1	9.7	0	'0.0	0	0.0
CASS	29,808	2	6.7	0	0.0	1	3.4	0	0.0
CHEROKEE	42,817	5	11.7	1	2.3	1	2.3	0	0.0
DELTA	4,816	0	0.0	1	20.8	0	0.0	0	0.0
FRANKLIN	7,964	0	0.0	2	25.1	0	0.0	0	0.0
GREGG	106,622	10	9.4	6	5.6	0	0.0	1	0.9
HARRISON	60,106	0	0.0	2	3.3	1	1.7	0	0.0
HENDERSON	67,106	6	8.9	10	14.9	1	1.5	0	0.0
HOPKINS	29,283	1	3.4	1	3.4	0	0.0	0	0.0
LAMAR	43,871	4	9.1	5	11.4	0	0.0	0	0.0
MARION	10,184	0	0.0	0	0.0	0	0.0	0	0.0
MORRIS	12,949	0	0.0	0	0.0	0	0.0	0	0.0
PANOLA	22.914	0	0.0	2	8.7	0	0.0	0	0.0
RAINS	7,418	0	0.0	0	0.0	0	0.0	0	0.0
RED RIVER	13,992	1	7.1	0	0.0	0	0.0	0	0.0
RUSK	44,508	0	0.0	0	0.0	1	2.2	0	0.0
SMITH	159,850	12	7.5	15	9.4	5	3.1	0	0.0
TITUS	24,703	5	20.2	0	0.0	1	4.0	0	0.0
UPSHUR	32,429	1	3.1	1	3.1	0	0.0	0	0.0
VAN ZANDT	40,616	2	4.9	3	7.4	1	2.5	0	0.0
WOOD	31,786	0	0.0	1	3.1	0	0.0	0	0.0
REGIONAL TOTALS	940,738	63	6.7	57	6.1	13	1.4	1	0.1
STATEWIDE TOTALS	18,617,441	3,001	16.1	1,211	6.5	340	1.8	67	0.4

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

PUBLIC HEALTH REGION 4 - 1995

		AMEBIASIS		CAMPYLOBACTER		SALMONELLOSIS		SHIGELLOSIS	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ANDERSON	51,095	0	0.0	2	3.9	9	17.6	2	3.9
BOWIE	85,574	0	0.0	2	2.3	10	11.7	17	19.9
CAMP	10,327	0	0.0	0	0.0	2	19.4	0	0.0
CASS	29,808	0	0.0	1	3.4	0	0.0	0	0.0
CHEROKEE	42,817	0	0.0	0	0.0	2	4.7	0	0.0
DELTA	4,816	0	0.0	0	0.0	1	20.8	0	0.0
FRANKLIN	7,964	0	0.0	0	0.0	2	25.1	0	0.0
GREGG	106,622	0	0.0	0	0.0	3	2.8	8	7.5
HARRISON	60,106	0	0.0	0	0.0	2	3.3	0	0.0
HENDERSON	67,106	0	0.0	0	0.0	0	0.0	4	6.0
HOPKINS	29,283	0	0.0	0	0.0	5	17.1	0	0.0
LAMAR	43,871	0	0.0	3	6.8	3	6.8	2	4.6
MARION	10,184	0	0.0	0	0.0	0	0.0	0	0.0
MORRIS	12,949	0	0.0	1	7.7	0	0.0	0	0.0
PANOLA	22,914	0	0.0	0	0.0	1	4.4	0	0.0
RAINS	7,418	0	0.0	1	13.5	0	0.0	0	0.0
RED RIVER	13,992	0	0.0	1	7.1	0	0.0	0	0.0
RUSK	44,508	0	0.0	1	2.2	1	2.2	1	2.2
SMITH	159,850	0	0.0	10	6.3	26	16.3	5	3.1
TITUS	24,703	0	0.0	0	0.0	5	20.2	2	8.1
UPSHUR	32,429	0	0.0	0	0.0	3	9.3	1	3.1
VAN ZANDT	40,616	0	0.0	2	4.9	4	9.8	0	0.0
WOOD	31,786	0	0.0	0	0.0	1	3.1	0	0.0
REGIONAL TOTALS	940,738	0	0.0	24	2.6	80	8.5	42	4.5
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2.363	12.7	3,017	16.2

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

PUBLIC HEALTH REGION 4 - 1995

		ASEPTIC MENINGITIS		CHICKENPOX		ENCEPHALITIS		TUBERCULOSIS	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ANDERSON	51,095	1	2.0	10	19.6	0	0.0	2	3.9
BOWIE	85,574	7	8.2	28	32.7	4	4.7	9	10.5
CAMP	10,327	1	9.7	0	0.0	0	0.0	2	19.4
CASS	29,808	1	3.4	5	16.8	0	0.0	1	3.4
CHEROKEE	42,817	3	7.0	0	0.0	0	0.0	1	2.3
DELTA	4,816	2	41.5	15	311.5	0	0.0	0	0.0
FRANKLIN	7,964	0	0.0	0	0.0	0	0.0	0	0.0
GREGG	106,622	12	11.3	12	11.3	0	0.0	11	10.3
HARRISON	60,106	5	8.3	57	94.8	0	0.0	3	5.0
HENDERSON	67,106	5	7.5	19	28.3	0	0.0	6	8.9
HOPKINS	29,283	2	6.8	0	0.0	1	3.4	2	6.8
LAMAR	43,871	7	16.0	1	2.3	0	0.0	6	13.7
MARION	10,184	0	0.0	0	0.0	0	0.0	3	29.5
MORRIS	12,949	0	0.0	0	0.0	0	0.0	1	7.7
PANOLA	22.914	0	0.0	0	0.0	0	0.0	3	13.1
RAINS	7.418	1	13.5	0	0.0	0	0.0	1	13.5
RED RIVER	13,992	1	7.1	0	0.0	0	0.0	1	7.1
RUSK	44,508	1	2.2	0	0.0	0	0.0	7	15.7
SMITH	159.850	19	11.9	339	212.1	1	0.6	10	6.3
TITUS	24,703	0	0.0	0	0.0	0	0.0	2	8.1
UPSHUR	32,429	2	6.2	0	0.0	0	0.0	2	6.2
VAN ZANDT	40,616	3	7.4	25	61.6	0	0.0	4	9.8
WOOD	31.786	4	12.6	5	15.7	0	0.0	4	12.6
REGIONAL TOTALS	940,738	77	8.2	516	54.9	6	0.6	81	8.6
STATEWIDE TOTALS	18,617,441	1.566	8.4	22.568	121.2	71	0.4	2.369	12.7

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

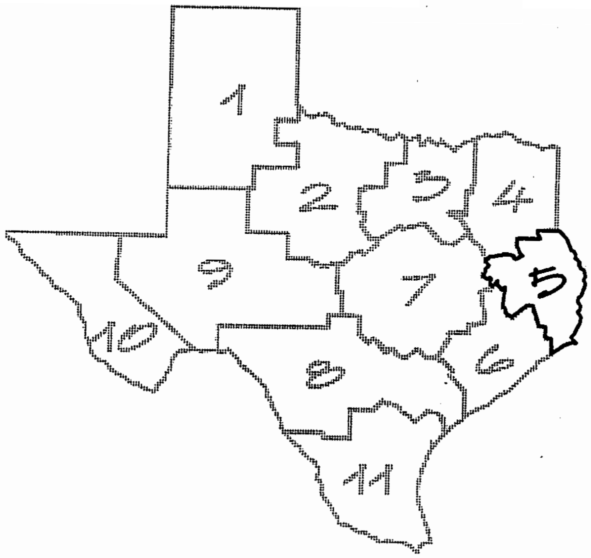
PUBLIC HEALTH REGION 4 - 1995

		MEASLES		MUMPS		PERTUSSIS		RUBELLA	
COUNN	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ANDERSON	51,095	0	0.0	0	0.0	1	2.0	0	0.0
BOWIE	85.574	0	0.0	0	0.0	4	4.7	0	0.0
CAMP	10,327	0	0.0	0	0.0	0	0.0	0	0.0
CASS	29,808	0	0.0	0	0.0	0	0.0	0	0.0
CHEROKEE	42,817	0	0.0	0	0.0	6	14.0	0	0.0
DELTA	4.816	0	0.0	0	0.0	0	0.0	0	0.0
FRANKLIN	7,964	0	0.0	0	0.0	0	0.0	0	0.0
GREGG	106,622	0	0.0	0	0.0	2	1.9	0	0.0
HARRISON	60,106	0	0.0	0	0.0	0	0.0	0	0.0
HENDERSON	67,106	0	0.0	0	0.0	5	7.5	0	0.0
HOPKINS	29,283	0	0.0	0	0.0	0	0.0	0	0.0
LAMAR	43,871	0	0.0	0	0.0	0	0.0	0	0.0
MARION	10,184	0	0.0	0	0.0	0	0.0	0	0.0
MORRIS	12.949	0	0.0	0	0.0	0	0.0	0	0.0
PANOLA	22,914	0	0.0	0	0.0	0	0.0	0	0.0
RAINS	7,418	0	0.0	0	0.0	0	0.0	0	0.0
RED RIVER	13,992	0	0.0	0	0.0	0	0.0	0	0.0
RUSK	44.508	0	0.0	0	0.0	1	2.2	0	0.0
SMITH	159,850	0	0.0	0	0.0	24	15.0	0	0.0
TITUS	24,703	0	0.0	0	0.0	0	0.0	0	0.0
UPSHUR	32.429	0	0.0	0	0.0	0	0.0	0	0.0
VAN ZANDT	40,616	0	0.0	0	0.0	4	9.8	0	0.0
WOOD	31.786	0	0.0	0	0.0	2	6.3	0	0.0
REGIONAL TOTALS	940,738	0	0.0	0	0.0	49	5.2	0	0.0
STATEWIDE TOTALS	18.617.441	14	01	43	0.2	217	1.2	8	0.0

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

PUBLIC HEALTH REGION 4 - 1995

COUNTY	1995 POP.	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P & S SYPHILIS CASES	P & S SYPHILIS RATE
ANDERSON	51,095	45	88.1	25	48.9	1	2.0
BOWIE	85,574	179	209.2	127	148.4	14	16.4
CAMP	10,327	7	67.8	3	29.1	8	77.5
CASS	29,808	33	110.7	13	43.6	1	3.4
CHEROKEE	42,817	42	98.1	40	93.4	0	0.0
DELTA	4,816	3	62.3	2	41.5	0	0.0
FRANKLIN	7,964	1	12.6	0	0.0	0	0.0
GREGG	106,622	163	152.9	37	34.7	68	63.8
HARRISON	60,106	71	118.1	150	249.6	17	28.3
HENDERSON	67,106	49	73.0	26	38.7	0	0.0
HOPKINS	29,283	45	153.7	5	17.1	1	3.4
LAMAR	43,871	59	134.5	35	79.8	1	2.3
MARION	10,184	13	127.7	3	29.5	3	29.5
MORRIS	12,949	16	123.6	6	46.3	4	30.9
PANOLA	22,914	49	213.8	.24	104.7	2	8.7'
RAINS	7.418	0	0.0	0	0.0	0	0.0
RED RIVER	13,992	17	121.5	10	71.5	0	0.0
RUSK	44,508	24	53.9	11	24.7	6	13.5
SMITH	159,850	505	315.9	402	251.5	10	6.3
TITUS	24,703	46	186.2	22	89.1	4	16.2
UPSHUR	32,429	18	55.5	14	43.2	1	3.1
VAN ZANDT	40,616	20	49.2	2	4.9	0	0.0
WOOD	31.786	12	37.8	3	9.4	1	3.1
REGIONAL TOTALS	940,738	1,417	150.6	960	102.0	142	15.1
STATEWIDE TOTALS	18,617,441	44,738	240.3	30,893	165.9	1.557	8.4



PUBLIC HEALTH REGION 5

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 5 - 1995

COUNTY	1995 POP.	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS C CASES	HEPATITIS C RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
ANGELINA	72,352	2	2.8	5	6.9	0	0.0	0	0.0
HARDIN	42,107	2	4.8	4	9.5	2	4.8	0	0.0
HOUSTON	21,492	0	0.0	0	0.0	0	0.0	0	0.0
JASPER	31,870	1	3.1	2	6.3	1	3.1	0	0.0
JEFFERSON	239,137	11	4.6	28	11.7	11	4.6	0	0.0
NACOGDOCHES	55,735	2	3.6	3	5.4	0	0.0	0	0.0
NEWTON	14,079	0	0.0	1	7.1	0	0.0	0	0.0
ORANGE	81,519	3	3.7	6	7.4	2	2.5	0	0.0
POLK	35,087	0	0.0	5	14.3	0	0.0	0	0.0
SABINE	9,948	1	10.1	0	0.0	0	0.0	0	0.0
SAN AUGUSTINE	7,962	0	0.0	0	0.0	0	0.0	0	0.0
SAN JACINTO	18,736	0	0.0	2	10.7	0	0.0	0	0.0
SHELBY	21,878	0	0.0	1	4.6	0	0.0	0	0.0
TRINITY	12,165	1	8.2	1	8.2	0	0.0	0	0.0
TYLER	17,975	3	16.7	2	11.1	0	0.0	0	0.0
REGIONAL TOTALS	682.042	26	3.8	60	8.8	16	2.3	0	0.0
STATEWIDE TOTALS	18,617,441	3.001	16.1	1,211	6.5	340	1.8	67	0.4

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

PUBLIC HEALTH REGION 5 - 1995

COUNTY	1995 POP.	AMEBIASIS CASES	AMEBIASIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE
ANGELINA	72,352	0	0.0	0	0.0	0	0.0	3	4.1
HARDIN	42,107	0	0.0	1	2.4	10	23.7	3	7.1
HOUSTON	21.492	0	0.0	0	0.0	1	4.7	2	9.3
JASPER	31,870	0	0.0	0	0.0	4	12.6	0	0.0
JEFFERSON	239,137	0	0.0	0	0.0	24	10.0	28	11.7
NACOGDOCHES	55,735	0	0.0	15	26.9	12	21.5	6	10.8
NEWTON	14,079	0	0.0	0	0.0	2	14.2	0	0.0
ORANGE	81,519	0	0.0	0	0.0	5	6.1	4	4.9
POLK	35,087	0	0.0	0	0.0	2	5.7	0	0.0
SABINE	9.948	0	0.0	0	0.0	3	30.2	0	0.0
SAN AUGUSTINE	7,962	0	0.0	0	0.0	0	0.0	2	25.1
SAN JACINTO	18,736	0	0.0	0	0.0	4	21.3	1	5.3
SHELBY	21,878	0	0.0	2	9.1	0	0.0	2	9.1
TRINITY	12,165	0	0.0	0	0.0	1	8.2	2	16.4
TYLER	17,975	0	0.0	0	0.0	1	5.6	0	0.0
REGIONAL TOTALS	682,042	0	0.0	18	2.6	69	10.1	53	7.8
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2.363	12.7	3,017	16.2

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

PUBLIC HEALTH REGION 5 - 1995

		ASEPTIC MENINGITIS		CHICKENPOX		ENCEPHALITIS		TUBERCULOSIS	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ANGELINA	72,352	4	5.5	6	8.3	0	0.0	7	9.7
HARDIN	42,107	5	11.9	156	370.5	0	0.0	2	4.7
HOUSTON	21,492	0	0.0	0	0.0	0	0.0	3	14.0
JASPER	31,870	0	0.0	90	282.4	0	0.0	1	3.1
JEFFERSON	239,137	14	5.9	510	213.3	1	0.4	23	9.6
NACOGDOCHES	55.735	0	0.0	38	68.2	0	0.0	9	16.1
NEWTON	14,079	0	0.0	25	177.6	0	0.0	1	7.1
ORANGE	81,519	11	13.5	53	65.0	0	0.0	4	4.9
POLK	35,087	2	5.7	0	0.0	0	0.0	2	5.7
SABINE	9,948	0	0.0	0	0.0	0	0.0	1	10.1
SAN AUGUSTINE	7,962	0	0.0	0	0.0	0	0.0	0	0.0
SAN JACINTO	18,736	0	0.0	0	0.0	0	0.0	2	10.7
SHELBY	21,878	0	0.0	0	0.0	0	0.0	3	13.7
TRINITY	12.165	0	0.0	21	172.6	1	8.2	1	8.2
TYLER	17,975	2	11.1	6	33.4	0	0.0	2	'11.1
REGIONAL TOTALS	682,042	38	5.6	905	132.7	2	0.3	61	8.9
STATEWIDE TOTALS	18,617,441	1,566	8.4	22,568	121.2	71	0.4	2,369	12.7

REPORTED CASES OF SELECTED VACCINE PREVENTABLE DISEASES AND RATES PER 100,000 POPULATIO'

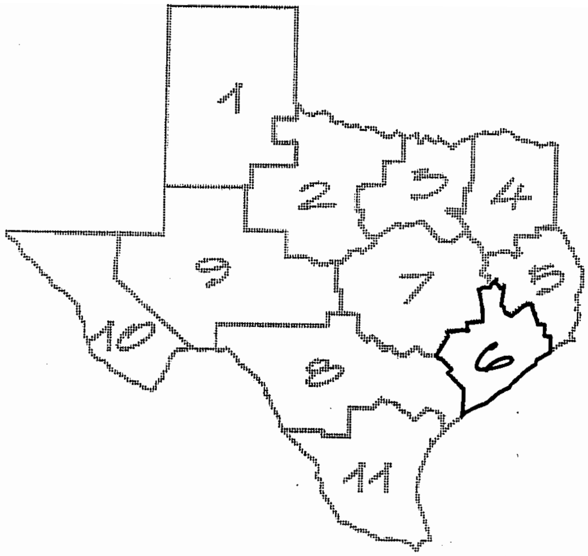
PUBLIC HEALTH REGION 5 - 1995

		MEASLES		MUMPS		PERTUSSIS		RUBELLA	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ANGELINA	72,352	0	0.0	0	0.0	1	1.4	0	0.0
HARDIN	42,107	0	0.0	0	0.0	0	0.0	0	0.0
HOUSTON	21,492	0	0.0	0	0.0	0	0.0	0	0.0
JASPER	31,870	0	0.0	0	0.0	0	0.0	0	0.0
JEFFERSON	239,137	0	0.0	0	0.0	0	0.0	0	0.0
NACOGDOCHES	55,735	0	0.0	1	1.8	0	0.0	0	0.0
NEWTON	14,079	0	0.0	0	0.0	0	0.0	0	0.0
ORANGE	81,519	0	0.0	0	0.0	3	3.7	0	0.0
POLK	35,087	0	0.0	0	0.0	1	2.9	0	0.0
SABINE	9,948	0	0.0	0	0.0	0	0.0	0	0.0
SAN AUGUSTINE	7,962	0	0.0	0	0.0	4	50.2	0	0.0
SAN JACINTO	18,736	0	0.0	0	0.0	0	0.0	0	0.0
SHELBY	21,878	0	0.0	0	0.0	2	9.1	0	0.0
TRINITY	12,165	0	0.0	0	0.0	0	0.0	0	0.0
NLER	17,975	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	682,042	0	0.0	1	0.1	11	1.6	0	0.0
STATEWIDE TOTALS	18,617,441	14	0.1	43	0.2	217	1.2	8	0.0

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

PUBLIC HEALTH REGION 5 - 1995

COUNN	1995 POP.	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P & S SYPHILIS CASES	P & S SYPHILIS RATE
ANGELINA	72,352	153	211.5	177	244.6	15	20.7
HARDIN	42,107	70	166.2	66	156.7	3	7.1
HOUSTON	21,492	25	116.3	15	69.8	4	18.6
JASPER	31,870	116	364.0	110	345.2	7	22.0
JEFFERSON	239,137	738	308.6	689	288.1	74	30.9
NACOGDOCHES	55,735	90	161.5	36	64.6	5	9.0
NEWTON	14,079	26	184.7	22	156.3	0	0.0
ORANGE	81,519	146	179.1	53	65.0	3	3.7
POLK	35,087	29	82.7	26	74.1	4	11.4
SABINE	9,948	5	50.3	2	20.1	0	0.0
SAN AUGUSTINE	7,962	6	75.4	1	12.6	0	0.0
SAN JACINTO	18,736	6	32.0	1	5.3	0	0.0
SHELBY	21,878	13	59.4	6	27.4	2	9.1
TRINITY	12,165	4	32.9	8	65.8	1	8.2
TYLER	17,975	14	77.9	16	89.0	1	5.6
REGIONAL TOTALS	682,042	1,441	211.3	1,228	180.0	119	17A
STATEWIDE TOTALS	18,617,441	44,738	240.3	30,893	165.9	1,557	8.4



PUBLIC HEALTH REGION 6

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 6 - 1995

		HEPATITIS A		HEPATITIS B		HEPATITIS C		HEPATITIS UNSPECIFIED	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
AUSTIN	20,286	1	4.9	0	0.0	0	0.0	0	0.0
BRAZORIA	208,001	13	6.2	4	1.9	1	0.5	0	0.0
CHAMBERS	20,524	1	4.9	1	4.9	0	0.0	0	0.0
COLORADO	18,230	0	0.0	0	0.0	1	5.5	0	0.0
FORT BEND	282.970	29	10.2	13	4.6	1	0.4	0	0.0
GALVESTON	226,907	25	11.0	19	8.4	5	2.2	0	0.0
HARRIS	3,050,222	539	17.7	193	6.3	37	1.2	26	0.9
LIBERTY	55,945	1	1.8	4	7.1	0	0.0	0	0.0
MATAGORDA	37.637	0	0.0	1	2.7	0	0.0	0	0.0
MONTGOMERY	210,632	5	2.4	0	0.0	0	0.0	0	0.0
WALKER	55,733	2	3.6	22	39.5	0	0.0	0	0.0
WALLER	25,628	0	0.0	0	0.0	1	3.9	0	0.0
WHARTON	40,314	0	0.0	3	7.4	0	0.0	0	0.0
REGIONAL TOTALS	4,253,029	616	14.5	260	6.1	46	1.1	26	0.6
STATEWIDE TOTALS	18,617,441	3,001	16.1	1.211	6.5	340	1.8	67	0.4

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

PUBLIC HEALTH REGION 6 - 1995

		AMEBIASIS		CAMPYLOBACTER		SALMONELLOSIS		SHIGELLOSIS	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
AUSTIN	20,286	0	0.0	0	0.0	2	9.9	0	0.0
BRAZORIA	208,001	1	0.5	4	1.9	18	8.7	10	4.8
CHAMBERS	20,524	0	0.0	2	9.7	0	0.0	0	0.0
COLORADO	18,230	0	0.0	0	0.0	2	11.0	0	0.0
FORT BEND	282,970	1	0.4	27	9.5	27	9.5	17	6.0
GALVESTON	226,907	1	0.4	21	9.3	27	11.9	45	19.8
HARRIS	3,050,222	10	0.3	129	4.2	432	14.2	446	14.6
LIBERTY	55,945	1	1.8	1	1.8	2	3.6	0	0.0
MATAGORDA	37,637	0	0.0	0	0.0	1	2.7	1	2.7
MONTGOMERY	210,632	0	0.0	0	0.0	1	0.5	1	0.5
WALKER	55,733	0	0.0	1	1.8	4	7.2	0	0.0
WALLER	25,628	0	0.0	0	0.0	0	0.0	0	0.0
WHARTON	40,314	0	0.0	0	0.0	4	9.9	0	0.0
REGIONAL TOTALS	4,253,029	14	0.3	185	4.3	520	12.2	520	12.2
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2,363	12.7	3,017	16.2

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

PUBLIC HEALTH REGION 6 - 1995

COUNTY	1995 POP.	ASEPTIC MENINGITIS		CHICKENPOX		ENCEPHALITIS		TUBERCULOSIS	
		CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
AUSTIN	20,286	0	0.0	0	0.0	0	0.0	0	0.0
BRAZORIA	208,001	4	1.9	364	175.0	0	0.0	12	5.8
CHAMBERS	20,524	0	0.0	12	58.5	0	0.0	0	0.0
COLORADO	18,230	1	5.5	3	16.5	0	0.0	1	5.5
FORT BEND	282.970	16	5.7	110	38.9	3	1.1	31	11.0
GALVESTON	226,907	33	14.5	440	193.9	2	0.9	26	11.5
HARRIS	3,050,222	460	15.1	4,334	142.1	9	0.3	786	25.8
LIBERTY	55,945	2	3.6	0	0.0	0	0.0	4	7.2
MATAGORDA	37,637	0	0.0	0	0.0	0	0.0	0	0.0
MONTGOMERY	210,632	1	0.5	292	138.6	0	0.0	19	9.0
WALKER	55,733	1	1.8	93	166.9	1	1.8	4	7.2
WALLER	25.628	0	0.0	84	327.8	0	0.0	3	11.7
WHARTON	40,314	0	0.0	48	119.1	0	0.0	4	9.9
REGIONAL TOTALS	4,253,029	518	12.2	5,780	135.9	15	0.4	890	20.9
STATEWIDE TOTALS	18,617,441	1,566	8.4	22.568	121.2	71	0.4	2.369	12.7

TB totals from Region 6 do not include cases from the Texas Department of Corrections (cases = 71, rate 54.7/100,000). These cases are included in the statewide totals.

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

PUBLIC HEALTH REGION 6 - 1995

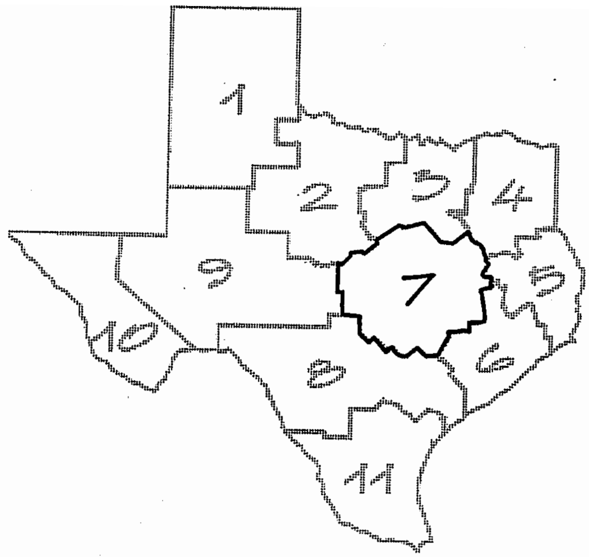
COUNTY	1995 POP.	MEASLES		MUMPS		PERTUSSIS		RUBELLA	
		CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
AUSTIN	20,286	0	0.0	0	0.0	0	0.0	0	0.0
BRAZORIA	208,001	0	0.0	0	0.0	0	0.0	0	0.0
CHAMBERS	20,524	0	0.0	0	0.0	0	0.0	0	0.0
COLORADO	18,230	0	0.0	0	0.0	0	0.0	0	0.0
FORT BEND	282,970	0	0.0	0	0.0	1	0.4	0	0.0
GALVESTON	226.907	0	0.0	0	0.0	3	1.3	0	0.0
HARRIS	3,050,222	0	0.0	14	0.5	15	0.5	1	0.0
LIBERTY	55,945	0	0.0	0	0.0	0	0.0	0	0.0
MATAGORDA	37,637	0	0.0	0	0.0	0	0.0	0	0.0
MONTGOMERY	210,632	0	0.0	1	0.5	1	0.5	0	0.0
WALKER	55,733	0	0.0	0	0.0	0	0.0	0	0.0
WALLER	25,628	0	0.0	0	0.0	0	0.0	0	0.0
WHARTON	40,314	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	4,253,029	0	0.0	15	0.4	20	0.5	1	0.0
STATEWIDE TOTALS	18,617,441	14	0.1	43	0.2	217	1.2	8	0.0

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

PUBLIC HEALTH REGION 6 - 1995

COUNTY	1995 POP.	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P & S SYPHILIS CASES	P & S SYPHILIS RATE
AUSTIN	20,286	22	108.4	10	49.3	3	14.8
BRAZORIA	208,001	327	157.2	186	89.4	4	1.9
CHAMBERS	20,524	13	63.3	4	19.5	0	0.0
COLORADO	18.230	39	213.9	44	241.4	2	11.0
FORT BEND	282,970	253	89.4	114	40.3	12	4.2
GALVESTON	226,907	710	312.9	540	238.0	17	7.5
HARRIS	3,050,222	8.035	263.4	6,920	226.9	412	13.5
LIBERTY	55,945	47	84.0	18	32.2	4	7.2
MATAGORDA	37,637	81	215.2	71	188.6	6	15.9
MONTGOMERY	210,632	167	79.3	60	28.5	17	8.1
WALKER	55,733	228	409.1	96	172.3	13	23.3
WALLER	25,628	177	690.7	74	288.7	4	15.6
WHARTON	40,314	134	332.4	80	198.4	9	22.3
REGIONAL TOTALS	4,253,029	10,233	240.6	8,217	193.2	503	11.8
STATEWIDE TOTALS	18,617,441	44,738	240.3	30,893	165.9	1,557	8.4

Sexually transmitted disease totals from Region 6 do not include cases from the Texas Department of Corrections These cases are included in the statewide totals.



PUBLIC HEALTH REGION 7

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 7 - 1995

		HEPATITIS A		HEPATITIS B		HEPATITIS C		HEPATITIS UNSPECIFIED	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
BASTROP	45,963	6	13.1	1	2.2	0	0.0	0	0.0
BELL	201,568	1	0.5	22	10.9	2	1.0	4	2.0
BLANCO	6,656	1	15.0	0	0.0	0	0.0	0	0.0
BOSQUE	15,640	4	25.6	0	0.0	0	0.0	0	0.0
BRAZOS	125,665	10	8.0	6	4.8	3	2.4	0	0.0
BURLESON	14,507	0	0.0	3	20.7	1	6.9	0	0.0
BURNET	25,689	8	31.1	0	0.0	1	3.9	0	0.0
CALDWELL	29,617	12	40.5	0	0.0	2	6.8	0	0.0
CORYELL	69,390	2	2.9	0	0.0	0	0.0	1	1.4
FALLS	18,477	2	10.8	1	5.4	0	0.0	0	0.0
FAYETTE	20,222	0	0.0	0	0.0	0	0.0	0	0.0
FREESTONE	16,630	1	6.0	1	6.0	1	6.0	0	0.0
GRIMES	20,864	0	0.0	3	14.4	0	0.0	0	0.0
HAMILTON	7,482	0	0.0	0	0.0	0	0.0	0	0.0
HAYS	80,930	12	14.8	1	1.2	2	2.5	0	0.0
HILL	27,882	1	3.6	2	7.2	0	0.0	1	3.6
LAMPASAS	14,072	1	7.1	0	0.0	1	7.1	0	0.0
LEE	13,826	1	7.2	1	7.2	0	0.0	0	0.0
LEON	14,197	1	7.0	0	0.0	0	0.0	0	0.0
LIMESTONE	21,266	0	0.0	2	9.4	3	14.1	0	0.0
LLANO	12.105	0	0.0	0	0.0	0	0.0	0	0.0
MCLENNAN	190,752	9	4.7	11	5.8	0	0.0	0	0.0
MADISON	11,496	0	0.0	3	26.1	0	0.0	0	0.0
MILAM	23,048	0	0.0	0	0.0	0	0.0	0	0.0
MILLS	4,460	0	0.0	0	0.0	0	0.0	0	0.0
ROBERTSON	16,258	0	0.0	1	6.2	2	12.3	0	0.0
SAN SABA	5,862	0	0.0	0	0.0	0	0.0	0	0.0
TRAVIS	612,198	31	5.1	47	7.7	28	4.6	3	0.5
WASHINGTON	27,608	1	3.6	0	0.0	0	0.0	0	0.0
WILLIAMSON	177.745	5	2.8	1	0.6	1	0.6	0	0.0
REGIONAL TOTALS	1;872,075	109	5.8	106	5.7	47	2.5	9	0.5
STATEWIDE TOTALS	18,617,441	3,001	16.1	1,211	6.5	340	1.8	67	0.4

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

PUBLIC HEALTH REGION 7 - 1995

COUNTY	1995 POP.	AMEBIASIS CASES	AMEBIASIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE
BASTROP	45,963	0	0.0	6	13.1	11	23.9	4	8.7
BELL	201,568	0	0.0	4	2.0	38	18.9	8	4.0
BLANCO	6,656	0	0.0	0	0.0	0	0.0	0	0.0
BOSQUE	15,640	0	0.0	0	0.0	4	25.6	2	12.8
BRAZOS	125,665	0	0.0	11	8.8	17	13.5	10	8.0
BURLESON	14,507	0	0.0	1	6.9	0	0.0	2	13.8
BURNET	25,689	0	0.0	0	0.0	2	7.8	4	15.6
CALDWELL	29,617	0	0.0	4	13.5	3	10.1	1	3.4
CORYELL	69,390	0	0.0	0	0.0	4	5.8	2	2.9
FALLS	18,477	0	0.0	0	0.0	3	16.2	0	0.0
FAYETTE	20,222	0	0.0	1	4.9	3	14.8	0	0.0
FREESTONE	16,630	0	0.0	0	0.0	1	6.0	0	0.0
GRIMES	20,864	0	0.0	2	9.6	0	0.0	2	9.6
HAMILTON	7,482	0	0.0	0	0.0	4	53.5	0	0.0
HAYS	80,930	0	0.0	7	8.6	13	16.1	40	49.4
HILL	27,882	0	0.0	1	3.6	2	7.2	0	0.0
LAMPASAS	14,072	0	0.0	1	7.1	6	42.6	1	7.1
LEE	13,826	0	0.0	1	7.2	2	14.5	0	0.0
LEON	14,197	0	0.0	0	0.0	1	7.0	1	7.0
LIMESTONE	21,266	5	23.5	0	0.0	2	9.4	0	0.0
LLANO	12,105	0	0.0	0	0.0	4	33.0	1	8.3
MCLENNAN	190,752	0	0.0	8	4.2	20	10.5	35	18.3
MADISON	11,496	0	0.0	0	0.0	0	0.0	0	0.0
MILAM	23,048	0	0.0	0	0.0	3	13.0	0	0.0
MILLS	4,460	0	0.0	0	0.0	2	44.8	0	0.0
ROBERTSON	16,258	0	0.0	0	0.0	1	6.2	1	6.2
SAN SABA	5,862	0	0.0	0	0.0	1	17.1	2	34.1
TRAVIS	612,198	9	1.5	99	16.2	136	22.2	167	27.3
WASHINGTON	27,608	2	7.2	5	18.1	3	10.9	1	3.6
WILLIAMSON	177,745	1	0.6	15	8.4	34	19.1	24	13.5
REGIONAL TOTALS	1,872,075	17	0.9	166	8.9	320	17.1	308	16.5
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2.363	12.7	3,017	16.2

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

PUBLIC HEALTH REGION 7 - 1995

COUNTY	1995 POP.	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	CHICKENPOX CASES	CHICKENPOX RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
BASTROP	45,963	7	15.2	30	65.3	0	0.0	3	6.5
BELL	201,568	26	12.9	986	489.2	1	0.5	23	11.4
BLANCO	6,656	0	0.0	0	0.0	0	0.0	0	0.0
BOSQUE	15,640	0	0.0	0	0.0	0	0.0	0	0.0
BRAZOS	125,665	2	1.6	188	149.6	1	0.8	7	5.6
BURLESON	14,507	0	0.0	0	0.0	0	0.0	1	6.9
BURNET	25,689	1	3.9	4	15.6	0	0.0	3	11.7
CALDWELL	29,617	3	10.1	3	10.1	0	0.0	2	6.8
CORYELL	69,390	6	8.6	1	1.4	0	0.0	0	0.0
FALLS	18,477	0	0.0	0	0.0	0	0.0	3	16.2
FAYETTE	20,222	1	4.9	0	0.0	0	0.0	0	0.0
FREESTONE	16,630	0	0.0	0	0.0	0	0.0	0	0.0
GRIMES	20.864	0	0.0	3	14.4	0	0.0	0	0.0
HAMILTON	7,482	0	0.0	0	0.0	0	0.0	0	0.0
HAYS	80,930	6	7.4	140	173.0	0	0.0	3	3.7
HILL	27,882	0	0.0	0	0.0	0	0.0	0	0.0
LAMPASAS	14,072	1	7.1	1	7.1	0	0.0	1	7.1
LEE	13,826	1	7.2	21	151.9	0	0.0	0	0.0
LEON	14,197	0	0.0	0	0.0	0	0.0	1	7.0
LIMESTONE	21,266	0	0.0	6	28.2	0	0.0	2	9.4
LLANO	12,105	0	0.0	0	0.0	0	0.0	0	0.0
MCLENNAN	190,752	3	1.6	221	115.9	0	0.0	9	4.7
MADISON	11.496	0	0.0	1	8.7	0	0.0	0	0.0
MILAM	23,048	0	0.0	5	21.7	1	4.3	1	4.3
MILLS	4,460	0	0.0	0	0.0	0	0.0	0	0.0
ROBERTSON	16,258	0	0.0	0	0.0	0	0.0	0	0.0
SAN SABA	5.862	0	0.0	19	324.1	0	0.0	0	0.0
TRAVIS	612,198	83	13.6	782	127.7	4	0.7	81	13.2
WASHINGTON	27,608	0	0.0	11	39.8	0	0.0	1	3.6
WILLIAMSON	177.745	10	5.6	836	470.3	0	0.0	9	5.1
REGIONAL TOTALS	1,872,075	150	8.0	3,258	174.0	7	0.4	150	8.0
STATEWIDE TOTALS	18,617,441	1,566	8.4	22,568	121.2	71	0.4	2,369	12.7

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

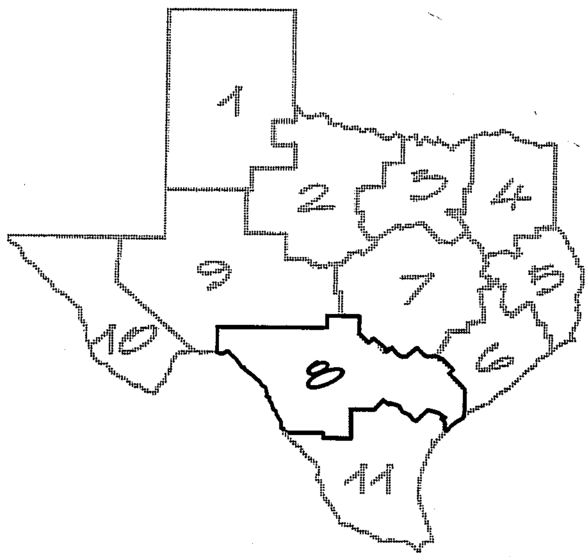
PUBLIC HEALTH REGION 7 - 1995

		MEASLES		MUMPS		PERTUSSIS		RUBELLA	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
BASTROP	45,963	0	0.0	0	0.0	0	0.0	0	0.0
BELL	201,568	0	0.0	2	1.0	3	1.5	0	0.0
BLANCO	6,656	0	0.0	0	0.0	0	0.0	0	0.0
BOSQUE	15,640	0	0.0	0	0.0	0	0.0	0	0.0
BRAZOS	125,665	0	0.0	0	0.0	3	2.4	0	0.0
BURLESON	14,507	0	0.0	0	0.0	0	0.0	0	0.0
BURNET	25,689	0	0.0	0	0.0	0	0.0	0	0.0
CALDWELL	29,617	0	0.0	0	0.0	0	0.0	0	0.0
CORYELL	69,390	0	0.0	0	0.0	0	0.0	0	0.0
FALLS	18,477	0	0.0	0	0.0	0	0.0	0	0.0
FAYETTE	20,222	0	0.0	0	0.0	0	0.0	0	0.0
FREESTONE	16,630	0	0.0	0	0.0	0	0.0	0	0.0
GRIMES	20,864	0	0.0	0	0.0	1	4.8	0	0.0
HAMILTON	7,482	0	0.0	0	0.0	0	0.0	0	0.0
HAYS	80,930	0	0.0	0	0.0	0	0.0	0	0.0
HILL	27,882	0	0.0	0	0.0	0	0.0	0	0.0
LAMPASAS	14,072	0	0.0	0	0.0	0	0.0	0	0.0
LEE	13,826	0	0.0	0	0.0	3	21.7	0	0.0
LEON	14,197	0	0.0	0	0.0	0	0.0	0	0.0
LIMESTONE	21,266	0	0.0	0	0.0	0	0.0	0	0.0
LLANO	12,105	0	0.0	0	0.0	0	0.0	0	0.0
MCLENNAN	190,752	0	0.0	0	0.0	0	0.0	0	0.0
MADISON	11,496	0	0.0	0	0.0	0	0.0	0	0.0
MILAM	23,048	0	0.0	0	0.0	3	13.0	0	0.0
MILLS	4,460	0	0.0	0	0.0	0	0.0	0	0.0
ROBERTSON	16,258	0	0.0	0	0.0	0	0.0	0	0.0
SAN SABA	5,862	0	0.0	0	0.0	0	0.0	0	0.0
TRAVIS	612,198	0	0.0	3	0.5	5	0.8	0	0.0
WASHINGTON	27,608	0	0.0	0	0.0	0	0.0	0	0.0
WILLIAMSON	177,745	0	0.0	1	0.6	1	0.6	0	0.0
REGIONAL TOTALS	1,872,075	0	0.0	6	0.3	19	1.0	0	0.0
STATEWIDE TOTALS	18,617,441	14	0.1	43	0.2	217	1.2	8	0.0

+-REPORTED CASES OF SELECTED SEXUALLY TRANSMITTED DISEASES AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 7 - 1995

		CHLAMYDIA		GONORRHEA		P & S SYPHILIS	
. COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE
BASTROP	45,963	33	71.8	26	56.6	0	0.0
BELL	201,568	1.408	698.5	667	330.9	25	12.4
BLANCO	6,656	1	15.0	0	0.0	0	0.0
BOSQUE	15,640	8	51.2	2	12.8	0	0.0
BRAZOS	125,665	308	245.1	159	126.5	23	18.3
BURLESON	14,507	21	144.8	14	96.5	1	6.9
BURNET	25,689	24	93.4	3	11.7	0	0.0
CALDWELL	29,617	18	60.8	15	50.6	0	0.0
CORYELL	69,390	126	181.6	25	36.0	1	1.4
FALLS	18,477	43	232.7	43	232.7	2	10.8
FAYETTE	20.222	32	158.2	12	59.3	1	4.9
FREESTONE	16,630	22	132.3	18	108.2	2	12.0
GRIMES	20,864	19	91.1	33	158.2	14	67.1
HAMILTON	7,482	3	40.1	0	0.0	0	0.0
HAYS	80.930	175	216.2	45	55.6	6	7.4
HILL	27,882	20	71.7	3	10.8	1	3.6
LAMPASAS	14,072	35	248.7	0	0.0	0	0.0
LEE	13,826	5	36.2	4	28.9	0	0.0
LEON	14,197	11	77.5	9	63.4	0	0.0
LIMESTONE	21,266	61	286.8	43	202.2	0	0.0
LLANO	12,105	2	16.5	0	0.0	0	0.0
MCLENNAN	190,752	1,047	548.9	684	358.6	15	7.9
MADISON	11,496	24	208.8	13	113.1	4	34.8
MILAM	23,048	28	121.5	28	121.5	4	17.4
MILLS	4,460	3	67.3	0	0.0	0	0.0
ROBERTSON	16.258	42	258.3	41	252.2	6	36.9
SAN SABA	5,862	2	34.1	0	0.0	0	0.0
TRAVIS	612,198	2,979	486.6	1,601	261.5	17	2.8
WASHINGTON	27,608	20	72.4	32	115.9	6	21.7
WILLIAMSON	177,745	128	72.0	39	21.9	1	0.6
REGIONAL TOTALS	1,872,075	6,648	355.1	3,559	190.1	129	6.9
STATEWIDE TOTALS	18,617,441	44,738	240.3	30,893	165.9	1,557	8.4



PUBLIC HEALTH REGION 8

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 8 - 1995

		HEPATITIS A		HEPATITIS B		HEPATITIS C		HEPATITIS UNSPECIFIED	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ATASCOSA	33,907	13	38.3	1	2.9	0	0.0	0	0.0
BANDERA	12,355	1	8.1	0	0.0	0	0.0	0	0.0
BEXAR	1,288,244	147	11.4	78	6.1	17	1.3	0	0.0
CALHOUN	19,637	1	5.1	1	5.1	1	5.1	0	0.0
COMAL	63,124	12	19.0	1	1.6	3	4.8	1	1.6
DE WITT	19,824	0	0.0	0	0.0	0	0.0	0	0.0
DIMMIT	10,847	1	9.2	0	0.0	0	0.0	0	0.0
EDWARDS	2.390	0	0.0	0	0.0	0	0.0	0	0.0
FRIO	15,250	4	26.2	0	0.0	0	0.0	0	0.0
GILLESPIE	18.644	1	5.4	0	0.0	0	0.0	0	0.0
GOLIAD	6,311	0	0.0	0	0.0	0	0.0	0	0.0
GONZALES	17,686	6	33.9	1	5.7	0	0.0	0	0.0
GUADALUPE	74.878	8	10.7	3	4.0	2	2.7	0	0.0
JACKSON	13,117	0	0.0	0	0.0	1	7.6	0	0.0
KARNES	14,889	0	0.0	1	6.7	0	0.0	0	0.0
KENDALL	16,921	0	0.0	0	0.0	0	0.0	0	0.0
KERR	39,449	24	60.8	6	15.2	0	0.0	1	2.5
KINNEY	3,259	0	0.0	0	0.0	0	0.0	0	0.0
LA SALLE	6.162	1	16.2	0	0.0	0	0.0	0	0.0
LAVACA	18,318	2	10.9	1	5.5	1	5.5	0	0.0
MAVERICK	40,406	19	47.0	0	0.0	0	0.0	0	0.0
MEDINA	31,489	0	0.0	0	0.0	0	0.0	0	0.0
REAL	2,491	0	0.0	0	0.0	0	0.0	0	0.0
UVALDE	24.587	9	36.6	1	4.1	1	4.1	0	0.0
VAL VERDE	41,735	1	2.4	3	7.2	1	2.4	0	0.0
VICTORIA	77,496	6	7.7	2	2.6	7	9.0	0	0.0
WILSON	26.415	2	7.6	0	0.0	0	0.0	0	0.0
ZAVALA	12,964	0	0.0	2	15.4	0	0.0	0	0.0
REGIONAL TOTALS	1,952,795	258	13.2	101	5.2	34	1.7	2	0.1
STATEWIDE TOTALS	18,617,441	3.001	16.1	1,211	6.5	340	1.8	67	0.4

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

PUBLIC HEALTH REGION 8 - 1995

COUNTY	1995 POP.	AMEBIASIS CASES	AMEBIASIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE
ATASCOSA	33.907	0	0.0	0	0.0	5	14.7	6	17.7
BANDERA	12,355	0	0.0	0	0.0	0	0.0	0	0.0
BEXAR	1,288,244	2	0.2	116	9.0	197	15.3	297	23.1
CALHOUN	19,637	0	0.0	0	0.0	5	25.5	45	229.2
COMAL	63.124	1	1.6	3	4.8	10	15.8	66	104.6
DE WITT	19,824	1	5.0	0	0.0	8	40.4	0	0.0
DIMMIT	10,847	1	9.2	0	0.0	0	0.0	1	9.2
EDWARDS	2,390	0	0.0	0	0.0	0	0.0	0	0.0
FRIO	15,250	0	0.0	1	6.6	4	26.2	3	19.7
GILLESPIE	18,644	0	0.0	0	0.0	0	0.0	0	0.0
GOLIAD	6,311	0	0.0	0	0.0	4	63.4	0	0.0
GONZALES	17,686	0	0.0	1	5.7	2	11.3	1	5.7
GUADALUPE	74,878	0	0.0	0	0.0	3	4.0	10	13.4
JACKSON	13.117	0	0.0	0	0.0	3	22.9	0	0.0
KARNES	14,889	0	0.0	1	6.7	5	33.6	0	0.0
KENDALL	16,921	0	0.0	1	5.9	2	11.8	2	11.8
KERR	39,449	0	0.0	1	2.5	6	15.2	5	12.7
KINNEY	3,259	0	0.0	0	0.0	0	0.0	1	30.7
LA SALLE	6,162	0	0.0	0	0.0	0	0.0	0	0.0
LAVACA	18,318	0	0.0	0	0.0	0	0.0	2	10.9
MAVERICK	40,406	2	5.0	0	0.0	3	7.4	20	49.5
MEDINA	31,489	0	0.0	1	3.2	0	0.0	1	3.2
REAL	2,491	0	0.0	0	0.0	0	0.0	0	0.0
UVALDE	24,587	6	24.4	0	0.0	2	8.1	2	8.1
VAL VERDE	41,735	0	0.0	5	12.0	13	31.1	23	55.1
VICTORIA	77.496	0	0.0	4	5.2	125	161.3	29	37.4
WILSON	26.415	0	0.0	0	0.0	2	7.6	0	0.0
ZAVALA	12.964	0	0.0	0	0.0	1	7.7	0	0.0
REGIONAL TOTALS	1,952,795	13	0.7	134	6.9	400	20.5	514	26.3
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2,363	12.7	3,017	16.2

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

PUBLIC HEALTH REGION 8 - 1995

		ASEPTIC MENINGITIS		CHICKENPOX		ENCEPHALITIS		TUBERCULOSIS	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ATASCOSA	33,907	0	0.0	22	64.9	0	0.0	1	2.9
BANDERA	12,355	1	8.1	0	0.0	0	0.0	0	0.0
BEXAR	1,288,244	91	7.1	19	1.5	1	0.1	128	9.9
CALHOUN	19,637	1	5.1	3	15.3	0	0.0	2	10.2
COMAL	63,124	8	12.7	349	552.9	0	0.0	1	1.6
DE WITT	19.824	0	0.0	51	257.3	0	0.0	2	10.1
DIMMIT	10,847	0	0.0	27	248.9	0	0.0	1	9.2
EDWARDS	2,390	0	0.0	16	669.5	0	0.0	0	0.0
FRIO	15,250	0	0.0	32	209.8	0	0.0	1	6.6
GILLESPIE	18,644	0	0.0	15	80.5	0	0.0	0	0.0
GOLIAD	6,311	0	0.0	0	0.0	0	0.0	0	0.0
GONZALES	17,686	0	0.0	1	5.7	0	0.0	0	0.0
GUADALUPE	74,878	5	6.7	36	48.1	0	0.0	4	5.3
JACKSON	13,117	0	0.0	23	175.3	0	0.0	2	15.2
KARNES	14,889	0	0.0	0	0.0	0	0.0	0	0.0
KENDALL	16,921	3	17.7	0	0.0	1	5.9	1	5.9
KERR	39,449	2	5.1	68	172.4	0	0.0	5	12.7
KINNEY	3,259	0	0.0	0	0.0	0	0.0	0	0.0
LA SALLE	6,162	0	0.0	0	0.0	0	0.0	0	0.0
LAVACA	18,318	0	0.0	2	10.9	0	0.0	1	5.5
MAVERICK	40,406	0	0.0	111	274.7	0	0.0	7	17.3
MEDINA	31,489	3	9.5	0	0.0	0	0.0	1	3.2
REAL	2,491	0	0.0	0	0.0	0	0.0	0	0.0
UVALDE	24,587	0	0.0	49	199.3	0	0.0	3	12.2
VAL VERDE	41,735	0	0.0	197	472.0	0	0.0	4	9.6
VICTORIA	77,496	6	7.7	372	480.0	1	1.3	2	2.6
WILSON	26,415	4	15.1	15	56.8	0	0.0	1	3.8
ZAVALA	12,964	0	0.0	58	447.4	0	0.0	0	0.0
REGIONAL TOTALS	1,952,795	124	6.4	1,466	75.1	3	0.2	167	8.6
STATEWIDE TOTALS	18,617,441	1,566	8.4	22,568	121.2	71	0.4	2.369	12.7

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

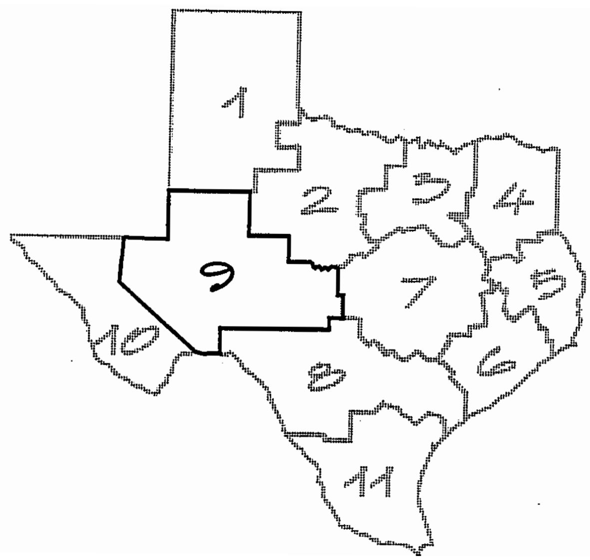
PUBLIC HEALTH REGION 8 - 1995

COUNTY	1995 POP.	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
ATASCOSA	33,907	0	0.0	0	0.0	0	0.0	0	0.0
BANDERA	12,355	0	0.0	0	0.0	0	0.0	0	0.0
BEXAR	1,288,244	10	0.8	0	0.0	47	3.6	1	0.1
CALHOUN	19,637	0	0.0	0	0.0	0	0.0	0	0.0
COMAL	63.124	0	0.0	1	1.6	0	0.0	0	0.0
DE WITT	19.824	0	0.0	0	0.0	0	0.0	0	0.0
DIMMIT	10,847	0	0.0	0	0.0	0	0.0	0	0.0
EDWARDS	2,390	0	0.0	0	0.0	0	0.0	0	0.0
FRIO	15,250	0	0.0	0	0.0	0	0.0	0	0.0
GILLESPIE	18,644	0	0.0	0	0.0	0	0.0	0	0.0
GOLIAD	6.311	0	0.0	0	0.0	0	0.0	0	0.0
GONZALES	17,686	0	0.0	0	0.0	0	0.0	0	0.0
GUADALUPE	74,878	0	0.0	0	0.0	1	1.3	0	0.0
JACKSON	13,117	0	0.0	0	0.0	0	0.0	0	0.0
KARNES	14,889	0	0.0	0	0.0	0	0.0	0	0.0
KENDALL	16,921	0	0.0	0	0.0	0	0.0	0	0.0
KERR	39,449	0	0.0	0	0.0	0	0.0	0	0.0
KINNEY	3,259	0	0.0	0	0.0	0	0.0	0	0.0
LA SALLE	6,162	0	0.0	0	0.0	0	0.0	0	0.0
LAVACA	18,318	0	0.0	0	0.0	0	0.0	0	0.0
MAVERICK	40,406	0	0.0	0	0.0	0	0.0	0	0.0
MEDINA	31,489	0	0.0	0	0.0	2	6.4	0	0.0
REAL	2,491	0	0.0	0	0.0	0	0.0	0	0.0
UVALDE	24,587	0	0.0	0	0.0	1	4.1	0	0.0
VAL VERDE	41,735	0	0.0	0	0.0	0	0.0	0	0.0
VICTORIA	77,496	0	0.0	0	0.0	0	0.0	0	0.0
WILSON	26,415	0	0.0	0	0.0	0	0.0	0	0.0
ZAVALA	12,964	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	1,952,795	10	0.5	1	0.1	51	2.6	1	0.1
STATEWIDE TOTALS	18,617,441	14	0.1	43	0.2	217	1.2	8	0.0

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

PUBLIC HEALTH REGION 8 - 1995

COUNTY	1995 POP.	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P & S SYPHILIS CASES.	P & S SYPHILIS RATE
ATASCOSA	33,907	15	44.2	2	5.9	0	0.0
BANDERA	12,355	9	72.8	0	0.0	0	0.0
BEXAR	1,288,244	4,348	337.5	1,974	148.6	50	3.9
CALHOUN	19,637	6	30.6	9	45.8	3	15.3
COMAL	63.124	91	144.2	22	34.9	0	0.0
DE WITT	19,824	28	141.2	5	25.2	1	5.0
DIMMIT	10,847	21	193.6	2	18.4	0	0.0
EDWARDS	2,390	0	0.0	0	0.0	0	0.0
FRIO	15,250	30	196.7	3	19.7	0	0.0
GILLESPIE	18,644	12	64.4	1	5.4	0	0.0
GOLIAD	6.311	4	63.4	0	0.0	0	0.0
GONZALES	17,686	46	260.1	19	107.4	1	5.7
GUADALUPE	74,878	93	124.2	33	44.1	0	0.0
JACKSON	13,117	6	45.7	5	38.1	9	68.6
KARNES	14,889	38	255.2	5	33.6	1	6.7
KENDALL	16,921	7	41.4	1	5.9	0	0.0
KERR	39,449	45	114.1	22	55.8	0	0.0
KINNEY	3,259	0	0.0	0	0.0	0	0.0
LA SALLE	6,162	18	292.1	0	0.0	0	0.0
LAVACA	18.318	16	87.3	11	60.1	2	10.9
MAVERICK	40,406	8	19.8	1	2.5	0	0.0
MEDINA	31,489	39	123.9	2	6.4	0	0.0
REAL	2,491	0	0.0	0	0.0	0	0.0
UVALDE	24,587	103	418.9	6	24.4	0	0.0
VAL VERDE	41,735	81	194.1	17	40.7	0	0.0
VICTORIA	77,496	356	459.4	222	286.5	21	27.1
WILSON	26,415	23	87.1	3	11.4	0	0.0
ZAVALA	12,964	45	347.1	5	38.6	0	0.0
REGIONAL TOTALS	1,952,795	5,488	281.0	2,310	118.3	88	4.5
STATEWIDE TOTALS	18,617,441	44,738	240.3	30,893	165.9	1.557	8.4



PUBLIC HEALTH REGION 9

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 9 - 1995

		HEPATITIS A		HEPATITIS B		HEPATITIS C		HEPATITIS UNSPECIFIED	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ANDREWS	14,931	1	6.7	0	0.0	0	0.0	0	0.0
BORDEN	812	0	0.0	0	0.0	0	0.0	0	0.0
COKE	3,413	0	0.0	0	0.0	0	0.0	0	0.0
CONCHO	3,168	0	0.0	0	0.0	0	0.0	0	0.0
CRANE	4,906	1	20.4	0	0.0	0	0.0	0	0.0
CROCKETT	4.21 8	0	0.0	0	0.0	0	0.0	0	0.0
DAWSON	15,368	0	0.0	0	0.0	0	0.0	0	0.0
ECTOR	124,202	41	33.0	28	22.5	15	12.1	2	1.6
GAINES	14,605	5	34.2	0	0.0	0	0.0	0	0.0
GLASSCOCK	1,538	0	0.0	0	0.0	0	0.0	0	0.0
HOWARD	32.008	16	50.0	7	21.9	1	3.1	0	0.0
IRION	1,689	0	0.0	0	0.0	0	0.0	0	0.0
KIMBLE	4.100	0	0.0	0	0.0	0	0.0	0	0.0
LOVING	111	0	0.0	0	0.0	0	0.0	0	0.0
MCCULLOCH	8,780	0	0.0	0	0.0	0	0.0	0	0.0
MARTIN	5,205	1	19.2	0	0.0	0	0.0	0	0.0
MASON	3,342	0	0.0	0	0.0	0	0.0	0	0.0
MENARD	2.280	0	0.0	0	0.0	0	0.0	0	0.0
MIDLAND	117,720	8	6.8	6	5.1	7	5.9	0	0.0
PECOS	16,758	1	6.0	0	0.0	1	6.0	0	0.0
REAGAN	4,832	1	20.7	0	0.0	0	0.0	0	0.0
REEVES	16,744	6	35.8	2	11.9	0	0.0	0	0.0
SCHLEICHER	3,107	0	0.0	0	0.0	0	0.0	0	0.0
STERLING	1,492	0	0.0	0	0.0	0	0.0	0	0.0
SUTTON	4,337	0	0.0	0	0.0	0	0.0	0	0.0
TERRELL	1,465	0	0.0	0	0.0	0	0.0	0	0.0
TOM GREEN	105,369	34	32.3	11	10.4	4	3.8	0	0.0
UPTON	4,641	0	0.0	0	0.0	0	0.0	0	0.0
WARD	13,286	0	0.0	0	0.0	1	7.5	0	0.0
WINKLER	8,796	0	0.0	1	11.4	0	0.0	0	0.0
REGIONAL TOTALS	543.223	115	21.2	55	10.1	29	5.3	2	0.4
STATEWIDE TOTALS	18,617,441	3.001	16.1	1.211	6.5	340	1.8	67	0.4

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

PUBLIC HEALTH REGION 9 - 1995

COUNTY	1995 POP.	AMEBIASIS CASES	AMEBIASIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE
ANDREWS	14,931	0	0.0	0	0.0	0	0.0	0	0.0
BORDEN	812	0	0.0	0	0.0	0	0.0	0	0.0
COKE	3,413	0	0.0	0	0.0	0	0.0	0	0.0
CONCHO	3,168	0	0.0	0	0.0	0	0.0	0	0.0
CRANE	4,906	0	0.0	0	0.0	0	0.0	0	0.0
CROCKETT	4,218	0	0.0	0	0.0	1	23.7	1	23.7
DAWSON	15,368	0	0.0	0	0.0	1	6.5	0	0.0
ECTOR	124,202	0	0.0	7	5.6	22	17.7	88	70.9
GAINES	14,605	0	0.0	0	0.0	2	13.7	3	20.5
GLASSCOCK	1,538	0	0.0	0	0.0	0	0.0	0	0.0
HOWARD	32.008	0	0.0	0	0.0	4	12.5	1	3.1
IRION	1,689	0	0.0	0	0.0	1	59.2	0	0.0
KIMBLE	4.100	0	0.0	1	24.4	0	0.0	0	0.0
LOVING	111	0	0.0	0	0.0	0	0.0	0	0.0
MCCULLOCH	8,780	0	0.0	1	11.4	1	11.4	1	11.4
MARTIN	5,205	0	0.0	0	0.0	0	0.0	0	0.0
MASON	3,342	0	0.0	0	0.0	1	29.9	0	0.0
MENARD	2.280	0	0.0	0	0.0	0	0.0	0	0.0
MIDLAND	117,720	0	0.0	2	1.7	9	7.6	8	6.8
PECOS	16,758	0	0.0	0	0.0	3	17.9	6	35.8
REAGAN	4,832	0	0.0	0	0.0	0	0.0	0	0.0
REEVES	16,744	0	0.0	2	11.9	0	0.0	0	0.0
SCHLEICHER	3,107	0	0.0	1	32.2	1	32.2	0	0.0
STERLING	1,492	0	0.0	0	0.0	1	67.0	0	0.0
SUTTON	4,337	0	0.0	0	0.0	0	0.0	0	0.0
TERRELL	1,465	0	0.0	0	0.0	0	0.0	1	68.3
TOM GREEN	105,369	0	0.0	10	9.5	29	27.5	139	131.9
UPTON	4.641	0	0.0	0	0.0	1	21.5	0	0.0
WARD	13.286	0	0.0	0	0.0	0	0.0	1	7.5
WINKLER	8.796	0	0.0	0	0.0	1	11.4	0	0.0
REGIONAL TOTALS	543.223	0	0.0	24	4.4	78	14.4	249	45.8
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2.363	12.7	3.017	16.2

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

PUBLIC HEALTH REGION 9 - 1995

COUNTY	1995 POP.	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	CHICKENPOX CASES	CHICKENPOX RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
ANDREWS	14,931	0	0.0	3	20.1	0	0.0	0	0.0
BORDEN	812	0	0.0	0	0.0	0	0.0	0	0.0
COKE	3,413	1	29.3	0	0.0	0	0.0	0	0.0
CONCHO	3,168	0	0.0	0	0.0	0	0.0	0	0.0
CRANE	4.906	0	0.0	0	0.0	0	0.0	0	0.0
CROCKETT	4,218	0	0.0	0	0.0	0	0.0	2	47.4
DAWSON	15,368	1	6.5	1	6.5	0	0.0	1	6.5
ECTOR	124,202	10	8.1	177	142.5	1	0.8	10	8.1
GAINES	14,605	0	0.0	2	13.7	0	0.0	1	6.8
GLASSCOCK	1,538	0	0.0	0	0.0	0	0.0	0	0.0
HOWARD	32,008	0	0.0	21	65.6	0	0.0	3	9.4
IRION	1,689	0	0.0	0	0.0	0	0.0	0	0.0
KIMBLE	4,100	0	0.0	0	0.0	0	0.0	0	0.0
LOVING	111	0	0.0	0	0.0	0	0.0	0	0.0
MCCULLOCH	8,780	0	0.0	0	0.0	0	0.0	0	0.0
MARTIN	5,205	0	0.0	0	0.0	0	0.0	0	0.0
MASON	3,342	0	0.0	0	0.0	0	0.0	0	0.0
MENARD	2,280	0	0.0	0	0.0	0	0.0	0	0.0
MIDLAND	117,720	6	5.1	304	258.2	0	0.0	3	2.5
PECOS	16,758	1	6.0	9	53.7	0	0.0	0	0.0
REAGAN	4,832	0	0.0	0	0.0	0	0.0	0	0.0
REEVES	16,744	1	6.0	4	23.9	0	0.0	0	0.0
SCHLEICHER	3,107	0	0.0	0	0.0	0	0.0	0	0.0
STERLING	1,492	0	0.0	0	0.0	0	0.0	0	0.0
SUTTON	4,337	0	0.0	0	0.0	0	0.0	0	0.0
TERRELL	1,465	0	0.0	0	0.0	0	0.0	0	0.0
TOM GREEN	105,369	22	20.9	227	215.4	0	0.0	2	1.9
UPTON	4,641	0	0.0	7	150.8	0	0.0	0	0.0
WARD	13,286	1	7.5	5	37.6	0	0.0	0	0.0
WINKLER	8,796	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	543,223	43	7.9	760	139.9	1	0.2	22	4.0
STATEWIDE TOTALS	18;617,441	1,566	8.4	22,568	121.2	71	0.4	2.369	12.7

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

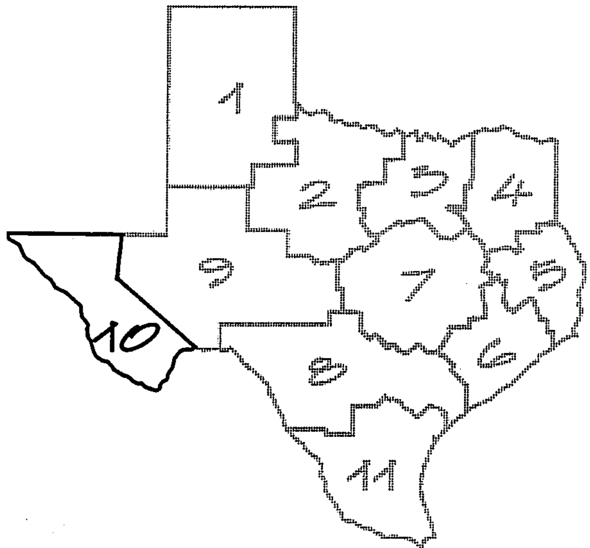
PUBLIC HEALTH REGION 9 - 1995

COUNTY	1995 POP.	MEASLES CASES	MEASLES RATE	MUMPS CASES	MUMPS RATE	PERTUSSIS CASES	PERTUSSIS RATE	RUBELLA CASES	RUBELLA RATE
ANDREWS	14,931	4	26.8	0	0.0	0	0.0	0	0.0
BORDEN	812	0	0.0	0	0.0	0	0.0	0	0.0
COKE	3,413	0	0.0	0	0.0	0	0.0	0	0.0
CONCHO	3,168	0	0.0	0	0.0	0	0.0	0	0.0
CRANE	4,906	0	0.0	0	0.0	0	0.0	0	0.0
CROCKETT	4,218	0	0.0	0	0.0	0	0.0	0	0.0
DAWSON	15,368	0	0.0	0	0.0	0	0.0	0	0.0
ECTOR	124,202	0	0.0	0	0.0	0	0.0	0	0.0
GAINES	14,605	0	0.0	0	0.0	3	20.5	0	0.0
GLASSCOCK	1,538	0	0.0	0	0.0	0	0.0	0	0.0
HOWARD	32,008	0	0.0	0	0.0	1	3.1	0	0.0
IRION	1,689	0	0.0	0	0.0	0	0.0	0	0.0
KIMBLE	4,100	0	0.0	0	0.0	0	0.0	0	0.0
LOVING	111	0	0.0	0	0.0	0	0.0	0	0.0
MCCULLOCH	8,780	0	0.0	0	0.0	0	0.0	0	0.0
MARTIN	5,205	0	0.0	0	0.0	1	19.2	0	0.0
MASON	3,342	0	0.0	0	0.0	0	0.0	0	0.0
MENARD	2,280	0	0.0	0	0.0	0	0.0	0	0.0
MIDLAND	117,720	0	0.0	0	0.0	0	0.0	0	0.0
PECOS	16,758	0	0.0	0	0.0	0	0.0	0	0.0
REAGAN	4,832	0	0.0	0	0.0	0	0.0	0	0.0
REEVES	16,744	0	0.0	0	0.0	0	0.0	0	0.0
SCHLEICHER	3,107	0	0.0	0	0.0	0	0.0	0	0.0
STERLING	1,492	0	0.0	0	0.0	0	0.0	0	0.0
SUTTON	4,337	0	0.0	0	0.0	0	0.0	0	0.0
TERRELL	1,465	0	0.0	0	0.0	0	0.0	0	0.0
TOM GREEN	105,369	0	0.0	0	0.0	1	0.9	0	0.0
UPTON	4,641	0	0.0	0	0.0	0	0.0	0	0.0
WARD	13,286	0	0.0	0	0.0	1	7.5	0	0.0
WINKLER	8,796	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	543,223	4	0.7	0	0.0	7	1.3	0	0.0
STATEWIDE TOTALS	18,617,441	14	0.1	43	0.2	217	1.2	8	0.0

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

PUBLIC HEALTH REGION 9 - 1995

COUNTY	1995 POP.	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P & S SYPHILIS CASES	P & S SYPHILIS RATE
ANDREWS	14,931	22	147.3	0	0.0	0	0.0
BORDEN	812	0	0.0	1	123.2	0	0.0
COKE	3,413	0	0.0	0	0.0	0	0.0
CONCHO	3,168	0	0.0	0	0.0	0	0.0
CRANE	4.906	2	40.8	0	0.0	0	0.0
CROCKETT	4,218	3	71.1	0	0.0	0	0.0
DAWSON	15,368	24	156.2	2	13.0	0	0.0
ECTOR	124,202	299	240.7	142	114.3	0	0.0
GAINES	14,605	14	95.9	1	6.8	0	0.0
GLASSCOCK	1.538	0	0.0	0	0.0	0	0.0
HOWARD	32,008	38	118.7	13	40.6	0	0.0
IRION	1,689	0	0.0	0	0.0	0	0.0
KIMBLE	4,100	0	0.0	0	0.0	0	0.0
LOVING	111	0	0.0	0	0.0	0	0.0
MCCULLOCH	8,780	10	113.9	1	11.4	0	0.0
MARTIN	5,205	3	57.6	2	38.4	0	0.0
MASON	3,342	2	59.8	1	29.9	0	0.0
MENARD	2,280	0	0.0	0	0.0	0	0.0
MIDLAND	117,720	221	187.7	170	144.4	0	0.0
PECOS	16,758	23	137.2	3	17.9	0	0.0
REAGAN	4,832	0	0.0	0	0.0	0	0.0
REEVES	16,744	7	41.8	1	6.0	0	0.0
SCHLEICHER	3,107	1	32.2	0	0.0	1	32.2
STERLING	1,492	0	0.0	0	0.0	0	0.0
SUTTON	4,337	0	0.0	1	23.1	0	0.0
TERRELL	1,465	0	0.0	0	0.0	0	0.0
TOM GREEN	105,369	296	280.9	87	82.6	1	0.9
UPTON	4,641	0	0.0	0	0.0	0	0.0
WARD	13,286	0	0.0	1	7.5	0	0.0
WINKLER	8,796	8	91.0	0	0.0	0	0.0
REGIONAL TOTALS	543,223	973	179.1	426	78.4	2	0.4
STATEWIDE TOTALS	18,617,441	44,738	240.3	30,893	165.9	1,557	8.4



PUBLIC HEALTH REGION 10

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

COUNTY	1995 POP.	HEPATITIS A CASES	HEPATITIS A RATE	HEPATITIS B CASES	HEPATITIS B RATE	HEPATITIS C CASES	HEPATITIS C RATE	HEPATITIS UNSPECIFIED CASES	HEPATITIS UNSPECIFIED RATE
BREWSTER	9.998	0	0.0	1	10.0	0	0.0	0	0.0
CULBERSON	3.776	1	26.5	1	26.5	0	0.0	0	0.0
EL PASO	676,838	397	58.7	46	6.8	20	3.0	0	0.0
HUDSPETH	3,149	0	0.0	0	0.0	0	0.0	0	0.0
JEFF DAVIS	2,071	0	0.0	0	0.0	0	0.0	0	0.0
PRESIDIO	7,612	0	0.0	1	13.1	0	0.0	0	0.0
REGIONAL TOTALS	703,444	398	56.6	49	7.0	20	2.8	0	0.0
STATEWIDE TOTALS	18,617,441	3,001	16.1	1,211	6.5	340	1.8	67	0.4

PUBLIC HEALTH REGION 10 - 1995

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

COUNTY	1995 POP.	AMEBIASIS CASES	AMEBIASIS RATE	CAMPYLOBACTER CASES	CAMPYLOBACTER RATE	SALMONELLOSIS CASES	SALMONELLOSIS RATE	SHIGELLOSIS CASES	SHIGELLOSIS RATE
BREWSTER	9,998	0	0.0	0	0.0	0	0.0	0	0.0
CULBERSON	3,776	0	0.0	0	0.0	0	0.0	0	0.0
EL PASO	676,838	14	2.1	38	5.6	111	16.4	98	14.5
HUDSPETH	3,149	0	0.0	0	0.0	0	0.0	0	0.0
JEFF DAVIS	2,071	0	0.0	0	0.0	0	0.0	0	0.0
PRESIDIO	7,612	0	0.0	0	0.0	0.	0.0	0	0.0
REGIONAL TOTALS	703,444	14	2.0	38	5.4	111	15.8	98	13.9
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2.363	12.7	3,017	16.2

PUBLIC HEALTH REGION 10 - 1995

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

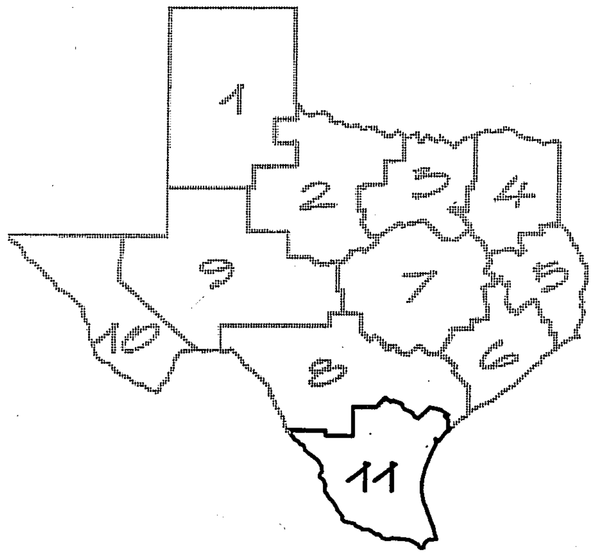
COUNTY	1995 POP.	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	CHICKENPOX CASES	CHICKENPOX RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
BREWSTER	9,998	1	10.0	0	0.0	0	0.0	0	0.0
CULBERSON	3,776	0	0.0	0	0.0	0	0.0	0	0.0
EL PASO	676,838	26	3.8	887	131.1	0	0.0	108	16.0
HUDSPETH	3,149	0	0.0	0	0.0	0	0.0	0	0.0
JEFF DAVIS	2,071	0	0.0	2	96.6	0	0.0	0	0.0
PRESIDIO	7,612	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	703,444	27	3.8	889	126.4	0	0.0	108	15.4
STATEWIDE TOTALS	18,617,441	1.566	8.4	22,568	121.2	71	0.4	2,369	12.7

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

		MEASLES		MUMPS		PERTUSSIS		RUBELLA	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
BREWSTER	9,998	0	0.0	0	0.0	0	0.0	0	0.0
CULBERSON	3,776	0	0.0	0	0.0	0	0.0	0	0.0
EL PASO	676,838	0	0.0	3	0.4	2	0.3	0	0.0
HUDSPETH	3,149	0	0.0	0	0.0	0	0.0	0	0.0
JEFF DAVIS	2.071	0	0.0	0	0.0	0	0.0	0	0.0
PRESIDIO	7,612	0	0.0	2	26.3	0	0.0	0	0.0
REGIONAL TOTALS	703,444	0	0.0	5	0.7	2	0.3	0	0.0
STATEWIDE TOTALS	18.617,441	14	0.1	43	0.2	217	1.2	8	0.0

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

		CHLAMYDIA		GONORRHEA		P & S SYPHILIS	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE
BREWSTER	9,998	19	190.0	0	0.0	0	0.0
CULBERSON	3,776	3	79.4	0	0.0	0	0.0
EL PASO	676,838	1248	184.4	159	23.5	2	0.3
HUDSPETH	3.149	1	31.8	0	0.0	0	0.0
JEFF DAVIS	2,071	2	96.6	0	0.0	0	0.0
PRESIDIO	7.612	8	105.1	1	13.1	0	0.0
REGIONAL TOTALS	703.444	1.281	182.1	160	22.7	2	0.3
STATEWIDE TOTALS	18,617,441	44,738	240.3	30,893	165.9	1,557	8.4



PUBLIC HEALTH REGION 11

REPORTED CASES OF HEPATITIS AND RATES PER 100,000 POPULATION

PUBLIC HEALTH REGION 11 - 1995

		HEPATITIS A		HEPATITIS B		HEPATITIS C		HEPATITIS UNSPECIFIED	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ARANSAS	18.891	0	0.0	2	10.6	0	0.0	0	0,0
BEE	31,720	6	18.9	0	0.0	0	0.0	0	0.0
BROOKS	8,612	1	11.6	0	0.0	0	0.0	0	0.0
CAMERON	294,968	179	60.7	5	1.7	4	1.4	13	4.4
DUVAL	13,547	1	7.4	0	0.0	0	0.0	0	0.0
HIDALGO	459.809	244	53.1	10	2.2	8	1.7	7	1.5
JIM HOGG	5,848	0	0.0	0	0.0	0	0.0	0	0.0
JIM WELLS	38,741	24	62.0	2	5.2	0	0.0	0	0.0
KENEDY	491	0	0.0	0	0.0	0	0.0	0	0.0
KLEBERG	32,938	2	6.1	3	9.1	0	0.0	0	0.0
LIVE OAK	9,781	1	10.2	0	0.0	0	0.0	0	0.0
MCMULLEN	852	0	0.0	0	0.0	0	0.0	0	0.0
NUECES	309,927	66	21.3	27	8.7	5	1.6	0	0.0
REFUGIO	8.113	0	0.0	0	0.0	0	0.0	0	0.0
SAN PATRICIO	63,517	5	7.9	7	11.0	0	0.0	0	0.0
STARR	50,972	12	23.5	1	2.0	0	0.0	1	2.0
WEBB	157,869	21	13.3	3	1.9	0	0.0	0	0.0
WILLACY	18,836	3	15.9	0	0.0	0	0.0	0	0.0
ZAPATA	11,048	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	1,536,480	565	36.8	60	3.9	17	1.1	21	1.4
STATEWIDE TOTALS	18,617,441	3,001	16.1	1.211	6.5	340	1.8	67	0.4

REPORTED CASES OF SELECTED GASTROINTESTINAL DISEASES AND RATES PER 100,000 POPULATION, PUBLIC HEALTH REGION 11 - 1995

		AMEBIASIS		CAMPYLOBACTER		SALMONELLOSIS		SHIGELLOSIS	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ARANSAS	18.891	0	0.0	1	5.3	0	0.0	13	68.8
BEE	31,720	1	3.2	0	0.0	2	6.3	1	3.2
BROOKS	8.612	0	0.0	4	46.4	3	34.8	0	0.0
CAMERON	294.968	14	4.7	3	1.0	29	9.8	97	32.9
DUVAL	13,547	0	0.0	0	0.0	2	14.8	0	0.0
HIDALGO	459,809	5	1.1	34	7.4	67	14.6	141	30.7
JIM HOGG	5,848	0	0.0	1	17.1	2	34.2	0	0.0
JIM WELLS	38,741	0	0.0	1	2.6	6	15.5	1	2.6
KENEDY	491	0	0.0	0	0.0	0	0.0	0	0.0
KLEBERG	32.938	0	0.0	11	33.4	8	24.3	44	133.6
LIVE OAK	9.781	0	0.0	0	0.0	3	30.7	0	0.0
MCMULLEN	852	0	0.0	0	0.0	0	0.0	0	0.0
NUECES	309,927	1	0.3	40	12.9	45	14.5	59	19.0
REFUGIO	8,113	0	0.0	1	12.3	7	86.3	0	0.0
SAN PATRICIO	63,517	0	0.0	4	6.3	14	22.0	21	33.1
STARR	50,972	0	0.0	0	0.0	6	11.8	0	0.0
WEBB	157,869	1	0.6	0	0.0	24	15.2	12	7.6
WILLACY	18,836	0	0.0	0	0.0	3	15.9	1	5.3
ZAPATA	11,048	0	0.0	0	0.0	1	9.1	0	0.0
REGIONAL TOTALS	1,536,480	22	1.4	100	6.5	222	14.4	390	25.4
STATEWIDE TOTALS	18,617,441	118	0.6	993	5.3	2.363	12.7	3,017	16.2

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

PUBLIC HEALTH REGION 11 - 1995

COUNTY	1995 POP.	ASEPTIC MENINGITIS CASES	ASEPTIC MENINGITIS RATE	CHICKENPOX CASES	CHICKENPOX RATE	ENCEPHALITIS CASES	ENCEPHALITIS RATE	TUBERCULOSIS CASES	TUBERCULOSIS RATE
ARANSAS	18,891	1	5.3	0	0.0	0	0.0	0	0.0
BEE	31,720	0	0.0	1	3.2	0	0.0	3	9.5
BROOKS	8,612	0	0.0	0	0.0	0	0.0	2	23.2
CAMERON	294,968	5	1.7	785	266.1	2	0.7	98	33.2
DUVAL	13,547	0	0.0	0	0.0	0	0.0	0	0.0
HIDALGO	459,809	5	1.1	670	145.7	1	0.2	110	23.9
JIM HOGG	5.848	0	0.0	0	0.0	0	0.0	2	34.2
JIM WELLS	38.741	0	0.0	121	312.3	0	0.0	3	7.7
KENEDY	491	0	0.0	0	0.0	0	0.0	0	0.0
KLEBERG	32,938	0	0.0	75	227.7	0	0.0	3	9.1
LIVE OAK	9,781	0	0.0	0	0.0	0	0.0	0	0.0
MCMULLEN	852	0	0.0	19	2,230.0	0	0.0	0	0.0
NUECES	309.927	13	4.2	1,558	502.7	1	0.3	32	10.3
REFUGIO	8,113	1	12.3	0	0.0	0	0.0	0	0.0
SAN PATRICIO	63,517	2	3.1	31	48.8	0	0.0	2	3.1
STARR	50,972	1	2.0	147	288.4	0	0.0	8	15.7
WEBB	157.869	1	0.6	194	122.9	0	0.0	48	30.4
WILLACY	18.836	1	5.3	16	84.9	0	0.0	5	26.5
ZAPATA	11,048	0	0.0	0	0.0	0	0.0	1	9.1
REGIONAL TOTALS	1,536,480	30	2.0	3,617	235.4	4	0.3	317	20.6
STATEWIDE TOTALS	18,617,441	1,566	8.4	22,568	121.2	71	0.4	2,369	12.7

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

PUBLIC HEALTH REGION 11 - 1995

		MEASLES		MUMPS		PERTUSSIS		RUBELLA	
COUNTY	1995 POP.	CASES	RATE	CASES	RATE	CASES	RATE	CASES	RATE
ARANSAS	18,891	0	0.0	0	0.0	0	0.0	0	0.0
BEE	31,720	0	0.0	0	0.0	0	0.0	0	0.0
BROOKS	8,612	0	0.0	0	0.0	0	0.0	0	0.0
CAMERON	294,968	0	0.0	0	0.0	0	0.0	0	0.0
DUVAL	13,547	0	0.0	0	0.0	0	0.0	0	0.0
HIDALGO	459,809	0	0.0	2	0.4	4	0.9	0	0.0
JIM HOGG	5,848	0	0.0	0	0.0	0	0.0	0	0.0
JIM WELLS	38,741	0	0.0	0	0.0	0	0.0	0	0.0
KENEDY	491	0	0.0	0	0.0	0	0.0	0	0.0
KLEBERG	32,938	0	0.0	0	0.0	0	0.0	0	0.0
LIVE OAK	9,781	0	0.0	0	0.0	0	0.0	0	0.0
MCMULLEN	852	0	0.0	0	0.0	0	0.0	0	0.0
NUECES	309,927	0	0.0	3	1.0	8	2.6	0	0.0
REFUGIO	8,113	0	0.0	0	0.0	0	0.0	0	0.0
SAN PATRICIO	63,517	0	0.0	0	0.0	3	4.7	0	0.0
STARR	50,972	0	0.0	0	0.0	2	3.9	0	0.0
WEBB	157,869	0	0.0	2	1.3	0	0.0	0	0.0
WILLACY	18,836	0	0.0	0	0.0	0	0.0	0	0.0
ZAPATA	11,048	0	0.0	0	0.0	0	0.0	0	0.0
REGIONAL TOTALS	1,536,480	0	0.0	7	0.5	17	1.1	0	0.0
STATEWIDE TOTALS	18,617,441	14	0.1	43	0.2	217	1.2	8	0.0

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

PUBLIC HEALTH REGION 11 - 1995

COUNTY	1995 POP.	CHLAMYDIA CASES	CHLAMYDIA RATE	GONORRHEA CASES	GONORRHEA RATE	P & S SYPHILIS CASES	P & S SYPHILIS RATE
ARANSAS	18,891	16	84.7	2	10.6	0	0.0
BEE	31,720	93	293.2	4	12.6	0	0.0
BROOKS	8.612	27	313.5	0	0.0	0	0.0
CAMERON	294,968	732	248.2	56	19.0	2	0.7
DUVAL	13,547	30	221.5	2	14.8	0	0.0
HIDALGO	459,809	921	200.3	78	17.0	10	2.2
JIM HOGG	5.848	4	68.4	2	34.2	0	0.0
JIM WELLS	38,741	74	191.0	5	12.9	0	0.0
KENEDY	491	0	0.0	0	0.0	0	0.0
KLEBERG	32.938	84	255.0	18	54.6	0	0.0
LIVE OAK	9,781	8	81.8	0	0.0	0	0.0
MCMULLEN	852	0	0.0	0	0.0	0	0.0
NUECES	309,927	1,168	376.9	373	120.4	8	2.6
REFUGIO	8,113	6	74.0	3	37.0	0	0.0
SAN PATRICIO	63,517	124	195.2	19	29.9	0	0.0
STARR	50,972	48	94.2	2	3.9	0	0.0
WEBB	157,869	202	128.0	17	10.8	1	0.6
WILLACY	18,836	39	207.1	3	15.9	0	0.0
ZAPATA	11,048	4	36.2	2	18.1	0	0.0
REGIONAL TOTALS	1,536,480	3,580	233.0	586	38.1	21	1.4
STATEWIDE TOTALS.	18,617,441	44,738	240.3	30.893	165.9	1,557	8.4

REPORTED CASES OF SELECTED DISEASES

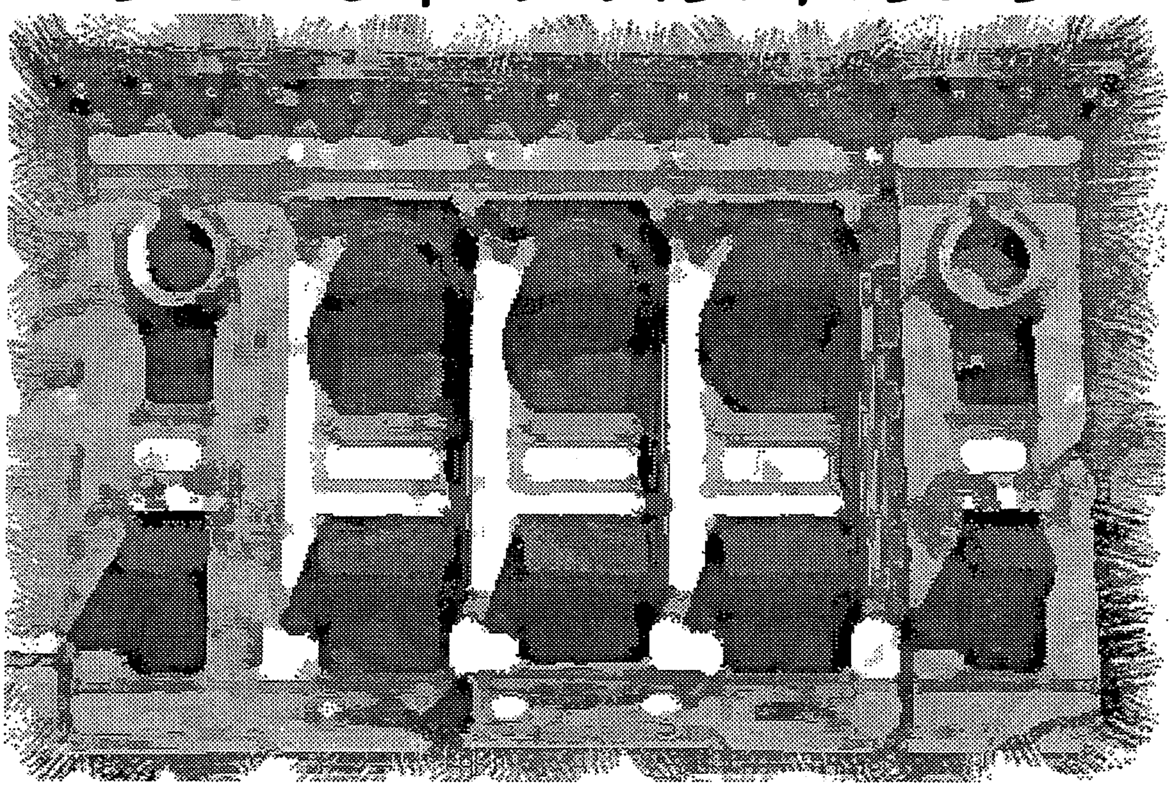


TABLE I

REPORTED CASES OF SELECTED DISEASES

TEXAS, 1986 - 1995

DISEASE	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986
AMEBIASIS	118	110	86	108	86	139	153	252	290	394
BOTULISM	0	27	2	1	4	7	4	4	4	5
BRUCELLOSIS	19	29	34	27	36	18	23	22	51	18
CAMPYLOBACTERIOSIS	993	997	849	996	810	739	625	745	780	803
CHICKENPOX	22.568	16,159	14,291	20,554	19,409	26.636	23.722	20,085	23,228	23,221
CHLAMYDIA	44.738	46.046	43,874	39,725	31,199	20,575				
CHOLERA	2	4	2	5	3	0	0	1	0	0
DENGUE	23	1	2	0	2	0	2	0	0	17
ENCEPHALITIS	71	54	61	89	121	74	60	74	118	191
ESCHERICHIA COLI O157:H7	38	72								
GONORRHEA	30,893	29,757	30,122	35,517	43,282	43.231	45.786	45,639	51,688	63,376
HAEMOPHILUS INFLUENZAE INF.	40	20	51	42	152	625	797	843	747	647
HANSEN'S DISEASE	36	31	31	52	38	37	25	35	31	29
HANTAVIRUS INFECTIONS	2	1	-	-	-	-	-	-	-	-
HEMOLYTIC UREMIC SYNDROME	8	11								
HEPATITIS A	3,001	2,877	2.798	1.828	2,663	2.722	3.211	2,739	1,886	2.137
HEPATITIS B	1,211	1,422	1.354	1,528	1.958	1.789	1.853	1,654	1,487	1,500
HEPATITIS C •	340	305	384	255						
HEPATITIS D •	2	4	1	5				-		
HEPATITIS NANB	7	9	28	26	144	130	236	149	161	205
HEPATITIS UNSPECIFIED	67	86	157	191	260	287	530	576	599	854
LEGIONELLOSIS	13	15	22	24	23	25	50	20	38	41
LISTERIOSIS	41	64	28	26	52	32	40	45	42	28
LYME DISEASE	77	56	48	113	57	44	82	25	33	9
MALARIA	89	93	48	45	75	80	79	73	56	84
MEASLES	14	17	10	1,097	294	4.409	3,313	286	452	398
MENINGITIS, ASEPTIC	1,566	970	1.329	1,242	1,275	811	836	675	758	1.383
MENINGITIS, BACTERIAL/OTHER	409	360	262	380	337	345	371	385	354	533
MENINGOCOCCAL INFECTIONS	253	237	157	111	100	93	93	98	126	138
MUMPS	43	234	231	388	363	470	551	327	338	239
PERTUSSIS	217	160	121	161	143	158	366	158	111	112
RABIES, HUMAN	0	1	1	0	1	1	0	0	0	0
RELAPSING FEVER	1	3	0	0	0	0	0	0	0	1
RMSF	6	7	7	1	2	6	19	22	22	21
RUBEW	8	9	22	10	16	99	64	30	5	78
SALMONELLOSIS	2,363	1,983	1.924	1,933	2,317	2.315	2,277	2,334	2,803	2.445
SHIGELLOSIS	3,017	2,410	4.581	3.568	2,178	3.550	1,654	2,826	2,087	2.454
STREPTOCOCCAL DISEASE, GP A	95	82								
SYPHILIS, PRIMARY & SECONDARY	1,557	1,913	2.530	3,316	4,970	5.165	4.267	3,124	3,071	3.967
TETANUS	3	12	7	5	10	7	5	6	5	12
TUBERCULOSIS	2.369	2,542	2.393	2,510	2.525	2,242	1.915	1,901	1.757	1,890
TYPHOID FEVER	21	10	15	23	31	28	20	3	36	28
TYPHUS, MURINE	53	9	12	18	22	36	30	30	34	52
VIBRIO INFECTIONS	24	31	17	15	25	25	17	27	20	

• Prior to 1992, hepatitis C and D cases were counted as hepatitis non A-non B.

TABLE II

RATES OF SELECTED DISEASES PER 100,000 POPULATION

TEXAS, 1986 - 1995

DISEASE	1995	1994	1993	1992	1991	1990	1989	1988	1987	1986
AMEBIASIS	0.6	0.6	0.5	0.6	0.5	0.8	0.9	1.5	1.7	2.4
BOTULISM	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BRUCELLOSIS	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.3	0.1
CAMPYLOBACTERIOSIS	5.3	5.5	4.8	5.7	4.7	4.4	3.6	4.3	4.6	4.8
CHICKENPOX	121.2	88.4	81.3	116.7	112.5	156.8	135.8	116.3	162.3	138.6
CHLAMYDIA	240.3	251.8	244.0	225.3	180.3	121.1		-		
CHOLERA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DENGUE	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
ENCEPHALITIS	0.4	0.3	0.3	0.5	0.7	0.4	0.3	0.4	0.7	1.1
ESCHERICHIA COLI O157:H7	0.2	0.4								
GONORRHEA	165.9	162.7	171.3	201.6	250.8	254.5	262.1	264.3	303.6	378.3
HAEMOPHILUS INFLUENZAE INF.	0.2	0.1	0.3	0.2	0.9	3.7	4.6	4.9	4.4	3.9
HANSEN'S DISEASE	0.2	0.2	0.2	0.3	0.2	0.2	0.1	0.2	0.2	0.2
HANTAVIRUS INFECTIONS	0.0	0.0								
HEMOLYTIC UREMIC SYNDROME	0.0	0.1								
HEPATITIS A	16.1	15.7	15.9	10.4	15.4	16.0	18.4	15.9	11.1	12.8
HEPATITIS B	6.5	7.8	7.7	8.7	11.3	10.5	10.6	9.6	8.7	9.0
HEPATITIS C *	1.8	1.7	2.2	1.5						
HEPATITIS D *	0.0	0.0	0.0	0.0						
HEPATITIS NANB	0.0	0.0	0.1	0.1	0.8	0.8	1.4	0.9	1.0	1.2
HEPATITIS UNSPECIFIED	0.4	0.5	0.9	1.1	1.5	1.7	3.0	3.3	3.5	5.1
LEGIONELLOSIS	0.1	0.1	0.1	0.1	0.1	0.1	0.3	0.1	0.2	0.2
LISTERIOSIS	0.2	0.4	0.2	0.1	0.3	0.2	0.2	0.3	0.3	0.2
LYME DISEASE	0.4	0.3	0.3	0.6	0.3	0.3	0.5	0.1	0.2	0.1
MALARIA	0.5	0.5	0.3	0.3	0.4					
MEASLES	0.1	0.1	0.1	6.2	1.7	26.0	19.0	1.7	2.7	2.4
MENINGITIS, ASEPTIC	8.4	5.3	7.6	7.1	7.4	4.8	4.8	3.9	4.5	8.3
MENINGITIS, BACTERIAL/OTHER	2.2	2.0	1.5	2.2	2.0	2.0	2.1	2.2	2.1	3.2
MENINGOCOCCAL INFECTIONS	1.4	1.3	0.9	0.6	0.6	0.5	0.5	0.6	0.7	0.8
MUMPS	0.2	1.3	1.3	2.2	2.1	2.8	3.2	1.9	2.0	1.4
PERTUSSIS	1.2	0.9	0.7	0.9	0.8	0.9	2.1	0.9	0.7	0.7
RABIES, HUMAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RELAPSING FEVER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RMSF	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1
RUBELLA	0.0	0.0	0.1	0.1	0.1	0.6	0.4	0.2	0.0	0.5
SALMONELLOSIS	12.7	10.8	10.9	11.0	13.4	13.6	13.0	13.5	16.5	14.6
SHIGELLOSIS	16.2	13.2	26.0	20.3	12.6	20.9	9.5	16.4	12.3	14.7
STREPTOCOCCAL DISEASE, GP A	0.5	0.5	-	-	-	-	-	-	-	-
SYPHILIS, PRIMARY & SECONDARY	8.4	10.5	14.1	18.8	28.8	30.4	24.4	18.1	18.0	23.7
TETANUS	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.1
TUBERCULOSIS	12.7	13.9	13.3	14.2	14.6	13.2	11.0	11.0	10.3	11.3
TYPHOID FEVER	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.2	0.2	0.2
TYPHUS, MURINE	0.3	0.0	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3
VIBRIO INFECTIONS	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.2	0.1	-

* Prior to 1992, hepatitis C and D cases were counted as hepatitis non A-non B.
Case rates are based on the 1995 population estimate (18,697,441) provided by State Health Data and Texas A&M University

TABLE III

REPORTED CASES OF SELECTED DISEASES BY MONTH OF ONSET

TEXAS, 1995

DISEASE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
AMEBIASIS	8	12	15	13	8	9	8	11	9	10	7	8
BOTULISM	0	0	0	0	0	0	0	0	0	0	0	0
BRUCELLOSIS	2	1	1	1	3	2	4	1	2	2	0	0
CAMPYLOBACTERIOSIS	81	52	55	69	117	125	127	93	77	77	67	53
CHICKENPOX ▫	721	1,590	3,662	4,199	3,687	2,569	1,653	106	374	462	179	3,366
CHLAMYDIA ▫	3,228	3,295	3,704	3,694	3,400	4,717	3,871	4,068	5,083	4,059	3,026	2,593
CHOLERA	0	0	1	1	0	0	0	0	0	0	0	0
DENGUE	0	0	2	0	0	0	2	5	9	7	2	2
ENCEPHAWIS	6	5	4	3	7	3	7	10	20	0	4	2
ESCHERICHIA COLI 0157:H7	3	2	2	3	2	3	12	2	5	1	2	1
GONORRHEA ▫	2,611	2.293	2,453	2,229	2,034	2,833	3,397	2,977	3,632	2,545	1,760	2,129
HAEMOPHILUS INFLUENZAE INF.	4	2	5	5	6	1	4	3	1	1	2	6
HANSEN'S DISEASE	1	2	7	0	2	6	5	1	3	2	2	5
HANTAVIRUS INFECTIONS	0	0	0	0	1	0	0	0	0	1	0	0
HEMOLYTIC UREMIC SYNDROME	1	0	1	1	0	0	1	1	0	1	2	0
HEPATITIS A	246	234	227	250	218	305	291	316	283	229	201	201
HEPATITIS B	117	121	101	83	103	124	97	121	111	99'	77	57
HEPATITIS C	29	21	32	28	24	30	38	34	31	32	21	20
HEPATITIS D	0	1	0	0	0	0	0	1	0	0	0	0
HEPATITIS NANB	0	0	2	0	2	0	0	0	0	0	3	0
HEPATITIS UNSPECIFIED	10	7	8	6	4	2	4	5	8	8	3	2
LEGIONELLOSIS	1	0	1	1	2	3	1	2	0	1	0	1
LISTERIOSIS	1	4	3	2	3	3	6	5	6	2	2	4
LYME DISEASE	7	8	3	6	11	14	9	4	8	3	3	1
MALARIA	7	6	1	8	2	10	11	11	10	6	7	10
MEASLES	0	0	0	0	0	0	0	4	3	6	1	0
MENINGITIS, ASEPTIC	66	66	99	191	373	269	148	116	84	63	53	38
MENINGITIS. BACTERIAL/OTHER	47	44	55	42	24	30	30	23	37	23	25	29
MENINGOCOCCAL INFECTIONS	27	29	37	28	28	16	13	9	8	15	11	32
MUMPS	8	4	3	2	9	4	1	1	3	4	2	2
PERTUSSIS	12	11	13	9	15	37	53	34	11	9	6	7
RABIES. HUMAN	0	0	0	0	0	0	0	0	0	0	0	0
RELAPSING FEVER	0	0	1	0	0	0	0	0	0	0	0	0
RMSF	0	0	0	0	0	0	3	1	0	1	1	0
RUBEW	0	1	0	1	0	5	0	0	0	0	1	0
SALMONELLOSIS	92	74	79	105	180	237	283	277	388	312	183	153
SHIGELLOSIS	251	87	116	119	184	176	289	411	495	383	314	192
STREPTOCOCCALDISEASE, GP A	7	16	13	11	10	12	6	0	9	7	3	1
SYPHILIS, PRIMARY & SECONDARY ▫	93	143	134	101	135	115	117	153	190	139	128	109
TETANUS	0	0	0	0	1	1	0	0	0	0	0	1
TUBERCULOSIS ▫	25	182	1228	162	237	223	203	214	205	232	158	300
TYPHOID FEVER	3	1	0	1	1	1	5	4	3	2	0	0
TYPHUS, MURINE	4	2	2	1	2	7	7	8	4	11	4	1
VIBRIO INFECTIONS	0	1	1	0	4	4	4	4	2	2	2	0

▫ Totals are by month of report rather than month of onset.

TABLE IV

REPORTED CASES OF SELECTED DISEASES BY AGE GROUP

TEXAS, 1995

DISEASE	<1	1 4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60+	UNK
AMEBIASIS	2	9	14	2	3	37	15	19	7	7	3
BOTULISM	0	0	0	0	0	0	0	0	0	0	0
BRUCELLOSIS	1	1	1	2	1	4	2	4	0	3	0
CAMPYLOBACTERIOSIS	79	174	76	40	48	165	148	105	54	91	13
CHLAMYDIA	**	40	38	1,230	18,095	20,287	3,131	493	90	84	1,250
CHOLERA	0	0	0	0	0	0	1	1	0	0	0
DENGUE	0	0	0	1	0	7	6	7	4	4	0
ENCEPHALITIS	1	3	9	5	2	14	10	12	7	8	0
ESCHERICHIA COLI 0157:H7	3	9	8	2	0	1	4	0	1	7	3
GONORRHEA	**	20	22	675	9,907	13,525	4,270	1,132	256	107	979
HAEMOPHILUS INFLUENZAE INF.	10	6	3	0	0	0	2	4	7	8	0
HANSEN'S DISEASE	0	0	2	0	2	1	4	8	7	12	0
HANTAVIRUS INFECTIONS	0	0	0	0	1	1	0	0	0	0	0
HEMOLYTIC UREMIC SYNDROME	1	6	0	0	0	1	0	0	0	0	0
HEPATITIS A	15	296	678	391	209	483	379	205	104	153	88
HEPATITIS B	2	5	11	8	71	329	366	210	81	84	44
HEPATITIS C	5	1	1	2	8	58	138	88	22	16	1
HEPATITIS D	0	1	0	0	0	0	0	1	0	0	0
HEPATITIS NANB	0	0	0	0	0	1	5	0	1	0	0
HEPATITIS UNSPECIFIED	1	5	17	7	10	6	4	10	2	5	0
LEGIONELLOSIS	0	0	0	0	0	1	1	4	1	6	0
LISTERIOSIS	11	0	0	0	0	6	3	2	5	14	0
LYME DISEASE	0	1	5	3	2	10	18	16	9	12	1
MALARIA	1	6	4	2	4	9	24	26	7	5	1
MEASLES	0	7	0	1	0	1	5	0	0	0	0
MENINGITIS, ASEPTIC	273	153	253	161	97	257	217	73	25	36	21
MENINGITIS, BACTERIAL/OTHER	102	28	12	19	16	43	58	42	28	60	1
MENINGOCOCCAL INFECTIONS	29	40	34	28	38	19	10	19	9	27	0
MUMPS	0	6	11	4	2	12	4	3	0	1	0
PERTUSSIS	129	43	13	7	6	8	4	3	2	2	0
RABIES, HUMAN	0	0	0	0	0	0	0	0	0	0	0
RELAPSING FEVER	0	0	0	0	0	0	1	0	0	0	0
RMSF	0	0	0	0	1	0	2	0	0	3	0
RUBELLA	0	0	0	1	3	2	1	1	0	0	0
SALMONELLOSIS	561	494	181	85	85	213	204	155	104	218	63
SHIGELLOSIS	77	1.058	759	221	76	278	246	111	54	90	47
STREPTOCOCCALDISEASE, GP A	9	2	6	3	1	8	10	12	13	31	0
SYPHILIS, PRIMARY & SECONDARY	**	0	0	7	221	602	453	197	50	26	1
TETANUS	0	0	0	0	0	0	2	0	0	1	0
TYPHOID FEVER	0	3	4	3	0	5	4	1	0	1	0
TYPHUS, MURINE	0	1	5	4	4	5	9	9	5	11	0
VIBRIO INFECTIONS	0	0	1	0	1	6	2	1	2	11	0
TUBERCULOSIS AGE GROUPS—>	0 4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65 +	UNK
TUBERCULOSIS	112	47	34	63	142	391	538	340	260	442	0

** Unable to determine true number of cases less than 1 year *of* age. These cases are included in the age unknown category.

TABLE V

RATES OF SELECTED DISEASES PER 100,000 POPULATION BY AGE GROUP

TEXAS, 1995

DISEASE	< 1	1-4	5-9	10-14	15-19	20-29	30-39	40-49	50-59	60 +
AMEBIASIS	0.6	0.7	1.0	0.1	0.2	1.3	0.5	0.7	0.4	0.3
BOTULISM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BRUCELLOSIS	0.3	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.0	0.1
CAMPYLOBACTERIOSIS	24.8	13.8	5.3	2.8	3.5	5.8	4.6	4.1	3.4	3.6
CHLAMYDIA	**	3.2	2.7	84.6	1,323.2	710.5	97.0	19.1	5.6	3.3
CHOLERA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DENGUE	0.0	0.0	0.0	0.1	0.0	0.2	0.2	0.3	0.2	0.2
ENCEPHALITIS	0.3	0.2	0.6	0.3	0.1	0.5	0.3	0.5	0.4	0.3
ESCHERICHIA COLI 0 157:H7	0.9	0.7	0.6	0.1	0.0	0.0	0.1	0.0	0.1	0.3
GONORRHEA	**	1.6	1.5	46.4	724.5	473.7	132.3	43.9	15.9	4.2
HAEMOPHILUS INFLUENZAE INF.	3.1	0.5	0.2	0.0	0.0	0.0	0.1	0.2	0.4	0.3
HANSEN'S DISEASE	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.3	0.4	0.5
HANTAVIRUS INFECTIONS	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
HEMOLYTIC UREMIC SYNDROME	0.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HEPATITIS A	4.7	23.5	47.4	26.9	15.3	16.9	11.7	8.0	6.5	6.1
HEPATITIS B	0.6	0.4	0.8	0.6	5.2	11.5	11.3	8.1	5.0	3.3
HEPATITIS C	1.6	0.1	0.1	0.1	0.6	2.0	4.3	3.4	1.4	0.6
HEPATITIS D	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HEPATITIS NANB	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0
HEPATITIS UNSPECIFIED	0.3	0.4	1.2	0.5	0.7	0.2	0.1	0.4	0.1	0.2
LEGIONELLOSIS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.1	0.2
LISTERIOSIS	3.5	0.0	0.0	0.0	0.0	0.2	0.1	0.1	0.3	0.6
LYME DISEASE	0.0	0.1	0.3	0.2	0.1	0.4	0.6	0.6	0.6	0.5
MALARIA	0.3	0.2	0.5	0.1	0.3	0.3	0.7	1.0	0.4	0.2
MEASLES	0.0	0.6	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0
MENINGITIS, ASEPTIC	85.8	12.2	17.7	11.1	7.1	9.0	6.7	2.8	1.6	1.4
MENINGITIS, BACTERIAL/OTHER	32.1	2.2	0.8	1.3	1.2	1.5	1.8	1.6	1.7	2.4
MENINGOCOCCAL INFECTIONS	9.1	3.2	2.4	1.9	2.8	0.7	0.3	0.7	0.6	1.1
MUMPS	0.0	0.5	0.8	0.3	0.1	0.4	0.1	0.1	0.0	0.0
PERTUSSIS	40.6	3.4	0.9	0.5	0.4	0.3	0.3	0.1	0.1	0.1
RABIES, HUMAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RELAPSING FEVER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RMSF	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.1
RUBELLA	0.0	0.0	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0
SALMONELLOSIS	176.4	39.3	12.7	5.8	6.2	7.5	6.3	6.0	6.5	8.7
SHIGELLOSIS	24.2	84.1	53.1	15.2	5.6	9.7	7.6	4.3	3.4	3.6
STREPTOCOCCAL DISEASE, GP A	2.8	0.2	0.4	0.2	0.1	0.3	0.3	0.5	0.8	1.2
SYPHILIS, PRIMARY & SECONDARY	**	0.0	0.0	0.5	16.2	21.1	14.0	7.6	3.1	1.0
TETANUS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
TYPHOID FEVER	0.0	0.2	0.3	0.2	0.0	0.2	0.1	0.0	0.0	0.0
TYPHUS, MURINE	0.0	0.1	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.4
VIBRIO INFECTIONS	0.0	0.0	0.1	0.0	0.1	0.2	0.1	0.0	0.1	0.4
TUBERCULOSIS AGE GROUPS—>	0-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65 +
TUBERCULOSIS	7.1	3.3	2.3	4.6	10.1	12.7	18.0	16.3	19.3	23.4

Case rates are based on the 1995 population estimate (18,617,447) provided by State Health Data and Texas A&M University
** Unable to determine true number of cases less than 1 year of age. These cases are included in the age unknown category.

TABLE VI

REPORTED CASES OF SELECTED DISEASES BY PUBLIC HEALTH REGIONS

TEXAS, 1995

DISEASE	1995 Total	PHR 1	PHR 2	PHR 3	PHR 4	PHR 5	PHR 6	PHR 7	PHR 8	PHR 9	PHR 10	PHR 11
AMEBIASIS	118	1	1	36	0	0	14	17	13	0	14	22
BOTULISM	0	0	0	0	0	0	0	0	0	0	0	0
BRUCELLOSIS	19	0	0	2	0	2	5	2	0	0	1	7
CAMPYLOBACTERIOSIS	993	85	31	188	24	18	185	166	134	24	38	100
CHICKENPOX	22.568	1,294	372	3,711	516	905	5,780	3,258	1.466	760	889	3.617
CHLAMYDIA	44.738	2.870	1,224	9,582	1,417	1.441	10.233	6,648	5,488	973	1,281	3,580
CHOLERA	2	0	0	1	0	0	0	0	1	0	0	0
DENGUE	29	0	0	6	0	0	8	2	0	0	0	13
ENCEPHALITIS	71	5	3	25	6	2	15	7	3	1	0	4
ESCHERICHIA COLI 0157:H7	38	15	1	10	2	0	5	2	2	0	0	1
GONORRHEA	30,893	1,317	749	11.381	960	1,228	8,217	3,559	2.310	426	160	586
HAEMOPHILUS INFLUENZAE INF.	40	8	2	6	1	1	8	2	4	1	1	6
HANSEN'S DISEASE	36	1	0	4	1	2	8	0	6	0	2	12
HANTAVIRUS INFECTIONS	2	1	0	0	0	1	0	0	0	0	0	0
HEMOLYTIC UREMIC SYNDROME	8	1	1	0	1	0	1	0	0	2	1	1
HEPATITIS A	3,001	132	37	682	63	26	616	109	258	115	398	565
HEPATITIS B	1,211	68	26	369	57	60	260	106	101	55	49	60
HEPATITIS C	340	10	38	70	13	16	46	47	34	29	20	17
HEPATITIS D	2	1	0	0	0	0	1	0	0	0	0	0
HEPATITIS NANB	7	2	0	1	0	0	0	0	0	4	0	0
HEPATITIS UNSPECIFIED	67	1	0	5	1	0	26	9	2	2	0	21
LEGIONELLOSIS	13	0	1	0	2	1	7	1	0	1	0	0
LISTERIOSIS	41	1	2	5	0	1	17	5	6	0	3	1
LYME DISEASE	77	2	9	29	6	1	10	6	2	5	0	7
MALARIA	89	0	2	20	2	0	44	12	5	1	3	0
MEASLES	14	0	0	0	0	0	0	0	10	4	0	0
MENINGITIS, ASEPTIC	1,566	41	33	485	77	38	518	150	124	43	27	30
MENINGITIS, BACTERIAL/OTHER	409	14	5	133	27	17	100	49	24	15	7	18
MENINGOCOCCAL INFECTIONS	253	8	7	73	52	14	35	33	13	5	3	10
MUMPS	43	1	1	6	0	1	15	6	1	0	5	7
PERTUSSIS	217	10	8	23	49	11	20	19	51	7	2	17
RABIES, HUMAN	0	0	0	0	0	0	0	0	0	0	0	0
RELAPSING FEVER	1	0	0	0	0	0	0	0	1	0	0	0
RMSF	6	0	1	2	2	0	0	1	0	0	0	0
RUBELLA	8	2	0	4	0	0	1	0	1	0	0	0
SALMONELLOSIS	2,363	150	62	351	80	69	520	320	400	78	111	222
SHIGELLOSIS	3,017	109	134	600	42	53	520	308	514	249	98	390
STREPTOCOCCAL DISEASE, GP A	95	2	0	19	0	4	25	23	15	2	0	5
SYPHILIS, PRIMARY & SECONDARY	1,557	11	3	425	142	119	503	129	88	2	2	21
TETANUS	3	0	0	0	0	0	3	0	0	0	0	0
TUBERCULOSIS	2,369	50	24	445	81	61	890	150	169	22	108	317
TYPHOID FEVER	21	0	0	6	1	0	9	2	1	1	1	0
TYPHUS, MURINE	53	0	3	1	0	1	1	0	0	0	0	47
VIBRIO INFECTIONS	24	0	1	2	0	1	9	5	4	1	0	1

Chlamydia, Gonorrhea, Syphilis and TB totals from Region 6 do not include cases from the Texas Department of Corrections. These cases are included in the statewide totals.

TABLE VII

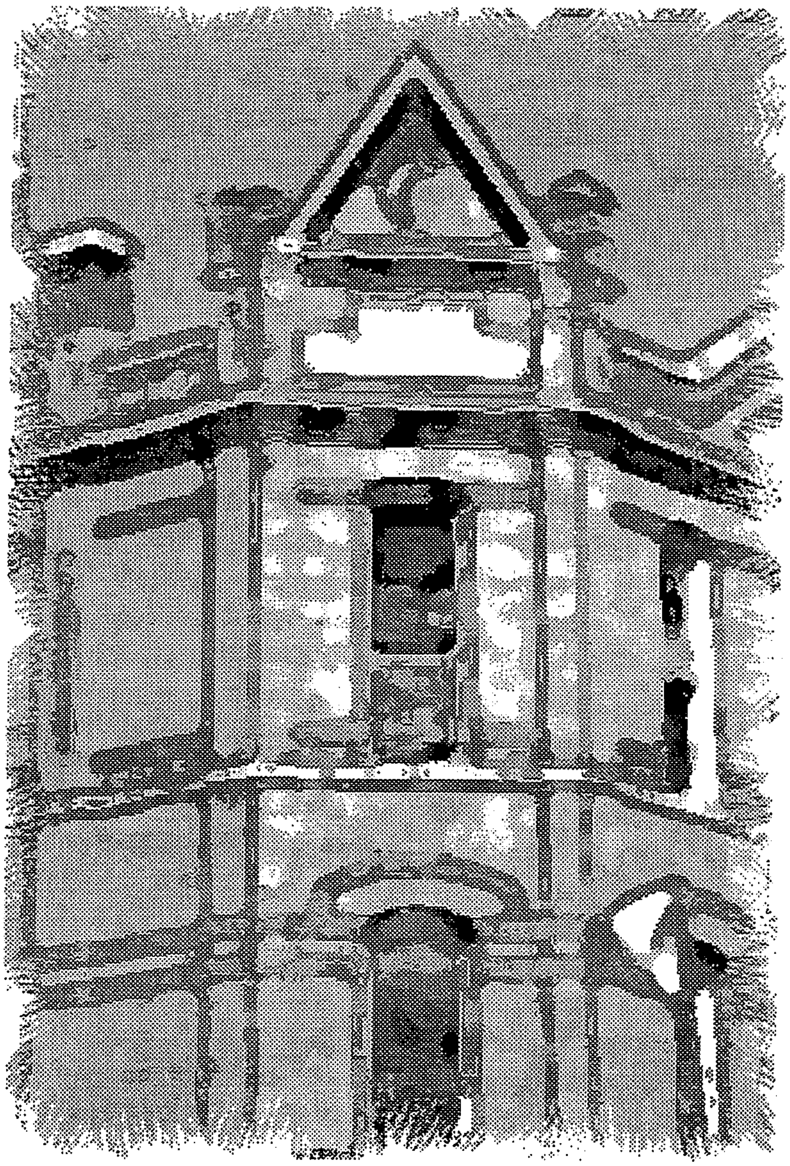
RATES OF SELECTED DISEASES PER 100,000 POPULATION BY PUBLIC HEALTH REGIONS

TEXAS, 1995

DISEASE	1995 Total	PHR 1	PHR 2	PHR 3	PHR 4	PHR 5	PHR 6	PHR 7	PHR 8	PHR 9	PHR 10	PHR 11
AMEBIASIS	0.6	0.1	0.2	0.7	0.0	0.0	0.3	0.9	0.7	0.0	2.0	1.4
BOTULISM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BRUCELLOSIS	0.1	0.0	0.0	0.0	0.0	0.3	0.1	0.1	0.0	0.0	0.1	0.5
CAMPYLOBACTERIOSIS	5.3	11.2	5.8	3.9	2.6	2.6	4.4	8.9	6.9	4.4	5.4	6.5
CHICKENPOX	121.2	171.0	69.8	76.6	54.9	132.7	135.9	174.0	75.1	139.9	126.4	235.4
CHLAMYDIA	240.3	379.2	229.7	197.8	150.6	211.3	240.6	355.1	281.0	179.1	182.1	233.0
CHOLERA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
DENGUE	0.2	0.0	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.8
ENCEPHALITIS	0.4	0.7	0.6	0.5	0.6	0.3	0.4	0.4	0.2	0.2	0.0	0.3
ESCHERICHIA COLI O157:H7	0.2	2.0	0.2	0.2	0.2	0.0	0.1	0.1	0.1	0.0	0.0	0.1
GONORRHEA	165.9	174.0	140.5	235.0	102.0	180.0	193.2	190.1	118.3	78.4	22.7	38.1
HAEMOPHILUS INFLUENZAE INF.	0.2	1.1	0.4	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.1	0.4
HANSEN'S DISEASE	0.2	0.1	0.0	0.1	0.1	0.3	0.2	0.0	0.3	0.0	0.3	0.8
HANTAVIRUS INFECTIONS	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
HEMOLYTIC UREMIC SYNDROME	0.0	0.1	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.1	0.1
HEPATITIS A	16.1	17.4	6.9	14.1	6.7	3.8	14.5	5.8	13.2	21.2	56.6	36.8
HEPATITIS B	6.5	9.0	4.9	7.6	6.1	8.8	6.1	5.7	5.2	10.1	7.0	3.9
HEPATITIS C	1.8	1.3	7.1	1.4	1.4	2.3	1.1	2.5	1.7	5.3	2.8	1.1
HEPATITIS D	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HEPATITIS NANB	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
HEPATITIS UNSPECIFIED	0.4	0.1	0.0	0.1	0.1	0.0	0.6	0.5	0.1	0.4	0.0	1.4
LEGIONELLOSIS	0.1	0.0	0.2	0.0	0.2	0.1	0.2	0.1	0.0	0.2	0.0	0.0
LISTERIOSIS	0.2	0.1	0.4	0.1	0.0	0.1	0.4	0.3	0.3	0.0	0.4	0.1
LYME DISEASE	0.4	0.3	1.7	0.6	0.6	0.1	0.2	0.3	0.1	0.9	0.0	0.5
MALARIA	0.5	0.0	0.4	0.4	0.2	0.0	1.0	0.6	0.3	0.2	0.4	0.0
MEASLES	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.7	0.0	0.0
MENINGITIS, ASEPTIC	8.4	5.4	6.2	10.0	8.2	5.6	12.2	8.0	6.4	7.9	3.8	2.0
MENINGITIS, BACTERIAL/OTHER	2.2	1.9	0.9	2.7	2.9	2.5	2.4	2.6	1.2	2.8	1.0	1.2
MENINGOCOCCAL INFECTIONS	1.4	1.1	1.3	1.5	5.5	2.1	0.8	1.8	0.7	0.9	0.4	0.7
MUMPS	0.2	0.1	0.2	0.1	0.0	0.1	0.4	0.3	0.1	0.0	0.7	0.5
PERTUSSIS	1.2	1.3	1.5	0.5	5.2	1.6	0.5	1.0	2.6	1.3	0.3	1.1
RABIES, HUMAN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RELAPSING FEVER	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
RMSF	0.0	0.0	0.2	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0
RUBELLA	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
SALMONELLOSIS	12.7	19.8	11.6	7.2	8.5	10.1	12.2	17.1	20.5	14.4	15.8	14.4
SHIGELLOSIS	16.2	14.4	25.1	12.4	4.5	7.8	12.2	16.5	26.3	45.8	13.9	25.4
STREPTOCOCCAL DISEASE, GP A	0.5	0.3	0.0	0.4	0.0	0.6	0.6	1.2	0.8	0.4	0.0	0.3
SYPHILIS, PRIMARY & SECONDARY	8.4	1.5	0.6	8.8	15.1	17.4	11.8	6.9	4.5	0.4	0.3	1.4
TETANUS	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
TUBERCULOSIS	12.7	6.6	4.5	9.2	8.6	8.9	20.9	8.0	8.7	4.1	15.4	20.6
TYPHOID FEVER	0.1	0.0	0.0	0.1	0.1	0.0	0.2	0.1	0.1	0.2	0.1	0.0
TYPHUS, MURINE	0.3	0.0	0.6	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	3.1
VIBRIO INFECTIONS	0.1	0.0	0.2	0.0	0.0	0.1	0.2	0.3	0.2	0.2	0.0	0.1

Chlamydia, Gonorrhea, Syphilis and TB totals from Region 6 do not include cases from the Texas Department of Corrections. These cases are included in the statewide totals.

APPENDIX A



Reportable Conditions in Texas

Several Texas laws require specific information regarding reportable conditions to be provided to the Texas Department of Health. The Communicable Disease Prevention and Control Act (Health & Safety Code, Chapter 81) requires physicians, dentists, veterinarians, and chiropractors to report, after the first professional encounter, each patient examined who is suspected of having a reportable disease. Also required to report are certain individuals from hospitals, laboratories, and schools. Detailed rules on the reporting of notifiable diseases and conditions and the duties of local health authorities may be found in Article 97, Title 25, Texas Administrative Code.

Diseases reportable immediately by telephone to local health departments or Texas Department of Health by name, age, sex, racelethnicity, DOB, address, telephone number, disease, date of onset, physician, and method of diagnosis.

TDH Infectious Disease Epidemiology & Surveillance Division
(CALL TOLL-FREE 1-800-252-8239)

Botulism, foodborne
Cholera
Meningococcal infections, invasive[1]
Plague
Rabies, human
Viral hemorrhagic fevers
Yellow Fever

TDH Immunization Division
(CALL TOLL-FREE 1-800-252-9152)

Diphtheria
Haemophilus influenzae type b infections, invasive[1]
Measles (rubeola)
Pertussis
Poliomyelitis, acute paralytic

Outbreaks, exotic diseases, and unusual group expressions of illness which may be of public health concern also should be reported immediately.

Diseases reportable to local health departments[2] by name, age, sex, racelethnicity, DOB, address, telephone number, disease, date of onset/occurrence, physician, and method of diagnosis. Report these diseases on a weekly basis except for rubella and tuberculosis which should be reported within one working day.

Acquired immune deficiency syndrome (AIDS)[3]
Amebiasis
Anthrax
Asbestosis[4]
Botulism (infant)
Brucellosis
Campylobacteriosis
Chancroid[5]
Chlamydia trachomatis infection[5]
Cryptosporidiosis
Dengue
Ehrlichiosis
Encephalitis (specify etiology)
Eschericia coli O157:H7 infection
Gonorrhea[5]
Hansen's disease (leprosy)
Hantavirus infection
Hemolytic uremic syndrome (HUS)
Hepatitis, acute viral (spec* type)[6]
Injuries (specify type)'
  Spinal cord injury
  Near drowning
Lead, adult elevated blood[4]
Lead, childhood elevated blood[4]
Legionellosis
Listeriosis
Lyme disease
Malaria
Meningitis (specify type)[8]
Mumps
Pesticide poisoning, acute occupational[4]
Relapsing fever
Rocky Mountain spotted fever
Rubella
Salmonellosis, including typhoid
Shigellosis
Silicosis[4]
Streptococcal disease, invasive Group A
Syphilis[5]
Tetanus
Trichinosis
Tuberculosis[g]
Tuberculosis infection in persons less than 15 years of age[g]
Typhus
Vibrio infections

By number only: Chickenpox

By last 4 digits of social security number; sex; racelethnicity; DOB; city, county, and zip of patient's residence; and name, address, and telephone number of physician: HIV infection in persons 13 years of age and older.

By name; sex; racelethnicity; DOB; city, county, and zip of patient's residence; and name, address, and telephone number of physician: HIV infection in persons less than 13 years of age.

---

[1]Includes meningitis, septicemia, cellulitis, epiglottitis, osteomyelitis, pericarditis, and septic arthritis.
[2]The local or regional health department shall collect reports of diseases and transmit them at weekly intervals to **TDH.**
[3]Reported by physician only once per case, following initial physician diagnosis.
[4]The Occupational Disease Reporting Act (Health & Safety Code, Chapter 84) requires physicians and directors of laboratories to report these occupationally related diseases to the Texas Department of Health at 512/458-7269.
[5]Syphilis, gonorrhea, chancroid, and laboratory-confirmed *Chlamydia trachomatis* infections are reportable in accordance with Sections 97.132, 97.134, and 97.135 of TAC. Form STD-27, "Confidential Report of Sexually Transmitted Disease," shall be used to report these sexually transmitted diseases. Questions may be directed to 512/490-2505.
[6]Includes types: A; B; C; D (Delta); E; non-A, non-B; and unspecified.
'The Injury Prevention and Control Act (Health & Safety Code, Chapter 87) requires physicians, medical examiners, and Justices of the Peace to report these injuries to local health departments or to the Texas Department of Health 512/458-7266.
[8]Includes aseptic/viral, bacterial (specify etiology), fungal, and other.
[9]Report tuberculosis on Form TB-400, "Report of Case and Patient Services." Questions may be directed to 512/458-7448.

Disease Reporting

Initial reporting of any reportable disease may be made by calling (800) 705-8868. An EPI-1 form may also be used to initially report notifiable conditions except:

- Foodborne botulism, cholera, invasive meningococcal infection, plague, rabies in humans, viral hemorrhagic fevers, and yellow fever. Call (800) 252-8239 immediately to report these diseases.
- Diphtheria, invasive *Haemophilus influenzae* type b infection, measles, pertussis, and acute paralytic poliomyelitis. Call (800) 252-9152 immediately to report these diseases.
- Rubella. Call (800) 252-9152 within one work day.
- Chancroid, Chlamydia *trachomatis* infections, gonorrhea, and syphilis. Use form STD-27 to report these sexually transmitted diseases. Call your regional office to order forms.
- HIV/AIDS. Use form HIV-1 to report HIV in persons > 13 years of age and form CDC 50.42A to report AIDS in persons >13 years of age. To report HIV or AIDS in persons ≤ 13 years of age, use form CDC 50.42B. Call your regional office to order forms.
- Tuberculosis infection in persons < 15 years of age and tuberculosis disease in persons of all ages. Use TB-400 forms to report. Call your regional office to order forms.

Disease Investigation Forms

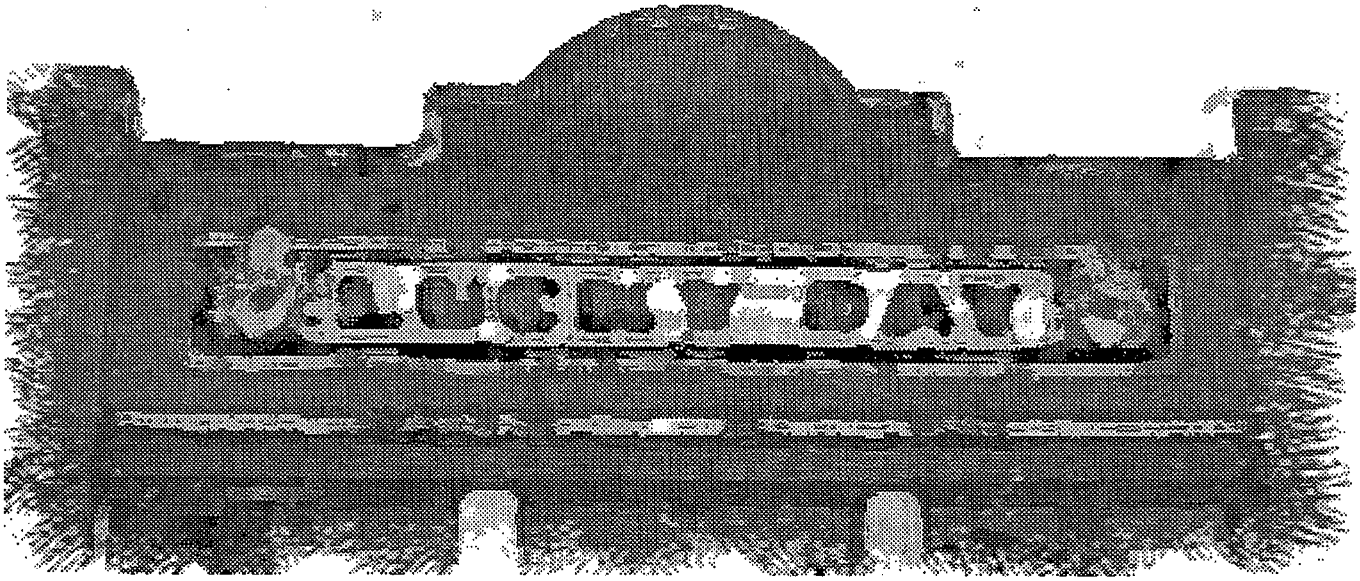
In addition to an initial report, the following notifiable conditions require further investigation for confirmation.

Botulism (infant and foodborne)
Brucellosis
California encephalitis
Dengue
Eastern equine encephalitis
Ehrlichiosis
Elevated blood lead levels (child and adult)
Escherichia coli O157:H7
Hantavirus infection
Hepatitis (viral)
Legionellosis
Lyme disease
Malaria
Meningitis (specify type)
Mumps
Near drowning
Occupationally acquired diseases
Relapsing fever
Rocky Mountain spotted fever
Spinal cord injuries
Tetanus
Trichinosis
Typhoid fever
Typhus
Venezuelan equine encephalitis
Vibrio infections (except Cholera)
Western equine encephalitis

For more information, call (800) 252-8239.

To report outbreaks, exotic diseases, and unusual group expressions of illness which may be of public health concern, call your local health department at (800) 705-8868, or the Infectious Disease Epidemiology and Surveillance division at (800) 252-8239 or (512) 458-7218. Forms are **available and required** for foodborne and waterborne outbreaks.

APPENDIX B



Glossary

asbestosis. a pneumoconiosis produced by inhalation of asbestos fibers. A chronic disease with slow onset that usually requires several years of exposure depending on the intensity of exposure. Characterized clinically by diffuse interstitial pulmonary fibrosis, often accompanied by thickening and sometimes calcification of the pleura. Shortness of breath on exertion is the most common presenting symptom. A chronic dry cough is common, but the cough may be productive, especially among smokers. Finger clubbing may appear in advanced cases.

brucellosis. a systemic bacterial disease caused by *Brucella* species with acute or insidious onset characterized by fever, weakness, headache, sweating, chills, depression, and weight loss. In Texas, it is usually contracted by eating unpasteurized goat cheese.

chronic carrier. a state of persistent infectivity and ongoing inflammation irrespective of the presence or absence of disease symptoms.

cluster. an aggregation of cases of a disease or other health-related condition, which are closely grouped in time and place. The number of cases may or may not exceed the expected number; frequently the expected number is not known.

E-Codes. International Classification of Diseases external cause of injury codes, developed by the World Health Organization. E-Codes include injuries caused by motor vehicles, falls, firearms, drownings and near drownings, fires and burns, poisonings, and other causes.

head injury N-Codes. skull fracture (N800.0 through N801.9 and N803.0 through N804.9); and intracranial injury (N850.0 through N854.1).

incidence rate. (sometimes referred to simply as incidence.) a measure of the frequency with which an event, such as a new case of illness, occurs in a population over a period of time. The numerator is the number of new cases occurring during a given time period; the denominator is the population at risk during the same time period.

leishmaniasis. a localized infection of the skin and mucous membranes caused by the intra-cellular protozoan *Leishmania mexicana* (in Texas). The disease starts as a small papule which slowly enlarges into an indolent ulcer. It is transmitted by the bite of an infected sandfly.

morbidity. any departure, subjective or objective, from a state of physiological or psychological well-being.

mortality rate. a measure of the frequency of occurrence of death in a defined population during a specified interval of time.

N-Codes. International Classification of Diseases of the nature of the injury and body part affected, developed by the World Health Organization. N-codes include, for example, head injury, spinal cord injury, fractures, abdominal/thoracic injuries, and others.

near drowning. survival for at least 24 hours following asphyxiation due to submersion in water.

TDH

ASSOCIATESHIP FOR DISEASE CONTROL & PREVENTION
TEXAS DEPARTMENT OF HEALTH
1100 WEST 49TH STREET
AUSTIN, TEXAS 78756
EPIREPORT@EPI.TDH.STATE.TX.US