

The work of the public health epidemiologist is done in cooperation with local health agencies, hospital infection control practitioners, nurses, physicians, schools, environmental agencies, and other state and federal partners. The contributions of timely health information, accurate analysis, and scientifically solid insight are essential to effective public health interventions. This summary of 2007 is provided for your information.

### 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. Surveillance involves investigating individual cases as well as epidemics. Only residents of Taylor County are counted in our surveillance.

The value of epidemiological 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 policy makers can plan, manage, fund, and justify disease control activities and research.

### Reporting

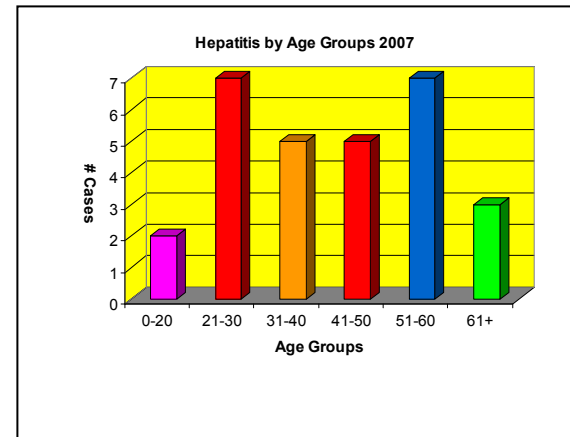
Most case reports must include the patient's name, date of birth, sex, race/ethnicity, city of residence, date of onset, physician's name, and method of diagnosis. Surveillance data are obtained from laboratory reports and case investigation forms. Social and demographic information is collected to determine patterns of disease in the population, identify case contacts, and target control measures. Reports should be given to the local public health department.

The information in this summary is subject to limitations which affect many data collections systems. Underreporting is a ubiquitous problem, but its extent differs among 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.

### Hepatitis

Hepatitis C is the most common chronic bloodborne infection in the United States. Local statistics include acute cases of all types of hepatitis. Taylor County reflects the epidemic proportions of the spread of this disease in the United States. However, because of the large number of cases nationwide, the CDC changed its criteria on the reporting of hepatitis B and C to include only acute, confirmed cases. That would be those coming down with the disease for the first time and not those who are chronic carriers. This change has effectively reduced the cases in Taylor County to about 10% of what the number of cases were in previous years. In 2007 we had 29 cases of hepatitis using the new criteria. Hepatitis A, 2; hepatitis B, 11, hepatitis C, 16. Hepatitis C is the most widespread disease in the county. Its presence in the community cannot be reversed or retarded by immunization efforts like hepatitis A and B which have vaccines that can be taken. There is no vaccine for hepatitis C. The Perinatal Hepatitis B Prevention Program is being emphasized by the state to identify pregnant women who test positive for HBsAg. The purpose is to prevent transmission of the hepatitis B virus to their infants. HBsAg positive women should be reported to the health department by physicians, nurses, clinics, labs, and hospitals so that we may begin the case management process which follows the mother through her pregnancy, delivery, and the baby's condition for a year.

Risk groups are those that have received infected blood or organs, dialysis patients, and those with exposure to sharp objects that have come into contact with an infected person. It is transmitted mainly through exposure to blood from an infected person but it can be transmitted sexually. With the explosion of new cases of hepatitis C, it should certainly be considered that an increasing number of cases are contracted through sexual contact, though presently, it is not known exactly how much of a role sexual contact has in the spread of hepatitis C. A new case definition of hepatitis may be provided that takes into account the risks associated with the exchange of all body fluids, not just the blood component. There are state and national initiatives concerning the curbing of the spread of hepatitis C. This very serious subject is being discussed and researched, with hopefully as the outcome, a better, more complete education of the public.



### Notable Diseases in Taylor County

**Streptococcus, Invasive:** The isolation of a streptococcal organism is usually from a normally sterile site. Specimens from a non-sterile site are not reportable to the state but are still accounted for in the county's statistics. These criteria are met in cases of streptococcal toxic shock syndrome, necrotizing fasciitis or death following disseminated intravascular coagulation, hemorrhagic pneumonia or isolation of organisms from lung tissue or necrotic wound specimens. There were 18 cases this year involving sterile and non-sterile specimens.

**Meningitis-**There were a few types of meningitis reported in Abilene with a total of 23 cases. Most types were viral meningitis. The viral type is relatively common but rarely serious, characterized by sudden onset of feverish illness with symptoms of meningeal or protective neural tissue membrane involvement. A rash resembling measles characterizes certain types and the illness seldom exceeds 10 days. GI and respiratory symptoms may be associated with enterovirus infection. A type of bacterial meningitis caused by *Neisseria* bacteria can be particularly devastating, with outbreaks prompting mass prophylaxis.

**Chickenpox (Varicella)-**Chickenpox is a highly contagious, viral disease that will eventually affect all Americans by the time they are an adult. Primary infection results in a disease that presents itself as a generalized, pruritic, vesicular rash and may be accompanied by fever and systemic symptoms. Complications

include bacterial superinfection, viral pneumonia, encephalitis, and meningitis. Varicella vaccine is available and is part of compulsory immunizations for children. There were 80 cases reported in Taylor County with 93% of cases being children 12 and under. There was an increase in the number of cases in 2007. The average number of cases in the last 5 years was 40 annually. Twelve months is the minimum age for vaccination. Of those children who contracted the disease 81% had vaccinations.

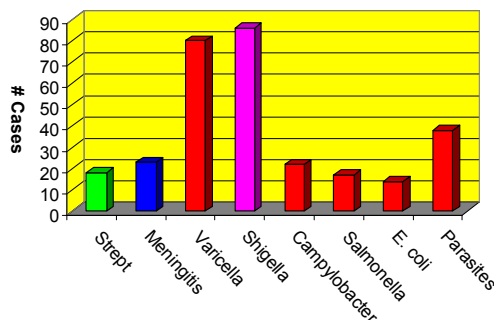
**Salmonellosis-**is a vastly underreported sickness because most people dismiss it as a 24-hour flu bug or something less serious than what they think.

Poultry products comprise approximately 50% of the common-vehicle of transmission in epidemics. A dose as small as 15 bacteria can infect but generally 100 to 1,000 are required. Salmonellosis symptoms occur 6 to 72 hours after eating and include diarrhea, abdominal cramping, fever, nausea, vomiting, and headache. Severe infection may lead to serious dehydration and occasionally death. The rate of salmonellosis in Texas has not dropped, which could probably be attributed to better reporting and people becoming more cognizant of the symptoms and seeking medical help. We had 17 cases in Taylor County in 2007.

**Shigellosis-** Shigella is an acute bacterial disease involving the intestines characterized by diarrhea with fever, nausea and sometimes vomiting and cramps. Convulsions may be an important complication in young children. The illness usually lasts four to seven days and is transmitted mainly by direct or indirect fecal-oral routes from someone who has the symptoms or someone who may not have the symptoms but is a carrier of the bacteria. Those who are responsible for spreading the disease are those who fail to clean hands and under fingernails thoroughly after toilet activities. They could then spread the infection to others by direct physical contact or indirectly contaminating food. There was a sharp increase in shigella starting in August and ending with 86 reported cases for the year.

**Tuberculosis**-A chronic bacterial infection caused by *Mycobacterium tuberculosis* characterized pathologically by the formation of granulomas. The most common site of infection is the lung but other organs may be involved. We had three cases in 2007. Also there were seven cases of mycobacterial diseases but they are not counted as TB morbidity unless there is concurrent tuberculosis.

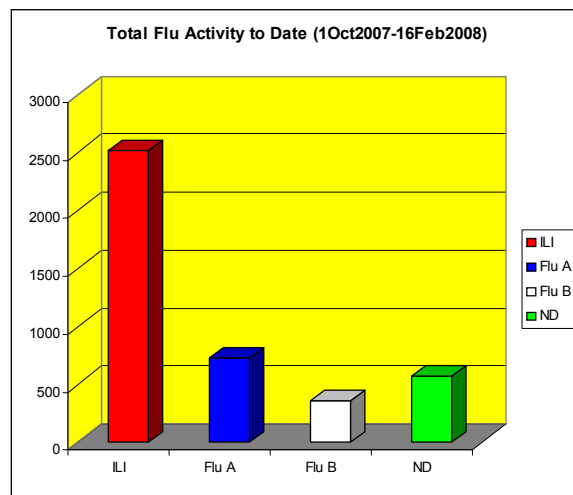
**Notable Diseases in Taylor County 2007**



**Escherichia coli, shiga-toxin producing (STEC)**

An infection of variable severity characterized by diarrhea (often bloody) and abdominal cramps. Illness may be complicated by hemolytic uremic syndrome (HUS); asymptomatic infections also may occur and the organism may cause extraintestinal infections. The laboratory criteria for a confirmed diagnosis is the isolation of *Escherichia coli* 0157:H7 from a specimen and shiga toxin production. Toxin presence is only a probable case. In the county we had 14 confirmed cases this year of *E. coli* infections. There were probably many more cases that were not reported nor confirmed because the intensity of the symptoms were not sufficient enough to warrant a doctor's visit. There have been many incidents of *E. coli* poisonings recently nation-wide in connection with contaminated farmlands and fast food restaurants.

**Campylobacter**-This is an acute zoonotic bacterial enteric disease of variable severity characterized by diarrhea, abdominal pain, malaise, fever, nausea and vomiting. Some of the cases mimic acute appendicitis; many infections are asymptomatic. After a bout with *Campylobacter* a reactive arthritis may occur. Diagnosis is based on isolation of the organisms from stool samples. The most probable edible sources are poultry, beef, and pork. Other sources of transmission include contact with pets, sheep, rodents, and birds. In Abilene we had 22 cases of *Campylobacter* infection. A person can become immune to it.



**Seasonal Influenza**

Each year our communities are faced with the impending flu season and its impact on our citizens' health. Although influenza is not a reportable condition in Texas, it causes significant illness among healthy people each flu season. As new emerging respiratory infections may face our communities, such as avian flu, enhancing current influenza surveillance is an important step towards timely detection and continued monitoring of diseases that affect our county. With information that we collect from schools, clinics, hospitals, physician's offices, etc. we are able to educate our communities and prepare them for future public health emergency situations. Our influenza sentinels represent a cross section of our medical community and they submit their statistics weekly from October through May. The above graph represents half of the flu season. Influenza-Like Illness is defined as fever > 100° F AND cough and/or sore throat. Flu cases are confirmed by rapid test, culture, antigen detection, or PCR. They are separated into Influenza A, B, and ND (not differentiated flu). Non-Differentiated flu is the designation given when a rapid flu test doesn't differentiate whether the person is positive for Flu A or Flu B, but is positive for flu.

**Sexually Transmitted Diseases**

**Syphilis**-A chronic systemic disease characterized by a primary lesion, a secondary eruption involving skin and mucous membranes, long periods of latency, and late seriously disabling lesions of skin, bone, viscera and cardiovascular system. Taylor County had 5 cases in 2007.

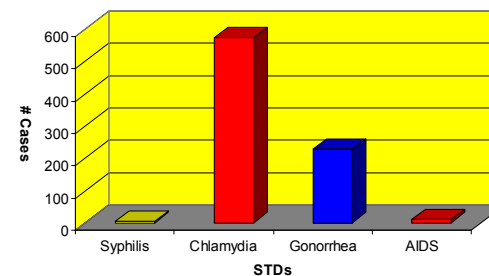
**Chlamydia**-This bacterium is one of the most common causes of sexually transmitted infections. It occurs frequently among sexually active adolescents and young adults. Asymptomatic infection is common among both men and women.

Co-infection with *chlamydia* often occurs among patients who have gonococcal infection; therefore, presumptive treatment of such patients for *chlamydia* is appropriate. The timely treatment of sex partners is essential for decreasing the risk for reinfecting the index patient and others. In Taylor County we had 573 *chlamydia* patients in 2007.

**Gonorrhea**-The bacterium *Neisseria gonorrhoeae* causes gonorrhea. Left untreated, it causes sterility in men and pelvic inflammatory disease, ectopic pregnancy, and sterility in women. The occurrence is common worldwide, affects men and women, especially sexually active adolescents and younger adults. The incidence has decreased over the past two decades; however the prevalence of resistance to penicillin and tetracycline is widespread. Other drugs can be used like fluoroquinolones and cephalosporins. There were 227 people diagnosed with Gonorrhea in 2007.

**HIV/AIDS**-These conditions involve a human retrovirus which infects and slowly depletes a subgroup of white blood cells called helper T-lymphocytes. These white blood cells are necessary to maintain an effective immune response. The prevalence is growing worldwide especially in developing countries. Infection with HIV produces a spectrum of disease that progresses from a clinically latent or asymptomatic state to AIDS as a late manifestation. Viral replication increases substantially as the immune system deteriorates. AIDS eventually develops in almost all HIV-infected persons. There were 9 new cases of AIDS in 2007.

**Sexually Transmitted Diseases Taylor County 2007**



**Epidemiology  
of  
Infectious Diseases  
in  
Abilene-Taylor County  
2007 Annual Report**

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