

***ANNUAL COMMUNICABLE DISEASE REPORT
2000***

WASHINGTON STATE DEPARTMENT OF HEALTH

Epidemiology, Health Statistics, and Public Health Laboratories

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Acquired Immunodeficiency Syndrome

Acquired Immunodeficiency Syndrome (AIDS) is caused by infection with human immunodeficiency virus (HIV), a retrovirus, which attacks the immune system and causes a gradual but progressive depletion of CD4+ T-lymphocytes, a type of white blood cell. The resulting immunodeficiency is manifested by the development of a variety of opportunistic infections and cancers, which become increasingly more severe over time and usually end in death. Recent developments in patient therapy, including combinations of antiretroviral drugs and protease inhibitors, have retarded the progress of disease in many patients and improved their clinical status, but the long-term effects of these interventions on the course of HIV infection and clinical disease are yet unknown.

The AIDS case definition, revised by the CDC most recently in 1993, consists of 26 indicator conditions (Table 1) or a low CD4+ T-lymphocyte count (< 200 cells/ μ l or < 14% of total lymphocytes) in the absence of symptomatic illness. The CD4+ T-lymphocyte criteria were added in 1993 to allow for the reporting of AIDS cases earlier in the course of HIV infection, before the onset of any AIDS-indicator clinical condition. Since its introduction in 1996, antiretroviral treatment has made AIDS case reporting an unreliable indicator of underlying trends in HIV infection because successfully treated patients may fail to develop AIDS-defining immunodeficiency and/or clinical illness. As a result, the Board of Health changed the reporting rules in September 1999 to allow HIV infection to be a reportable condition. As of 12/31/00, 2,081 cases of HIV (not AIDS) were reported to the Department of Health. These data are considered to be incomplete; consequently, analyses will not be included until the 2001 Annual Report.

Table 1. AIDS-indicator diseases included in the surveillance case definition

Candidiasis of bronchi, trachea, or lungs
Candidiasis, esophageal
Cervical cancer, invasive*
Coccidioidomycosis, disseminated or extrapulmonary
Cryptococcosis, extrapulmonary
Cryptosporidiosis, chronic intestinal (>1 months duration)
Cytomegalovirus disease (other than liver, spleen or lymph nodes)
Cytomegalovirus retinitis (with loss of vision)
Encephalopathy, HIV-related
Herpes simplex: chronic ulcer(s) (> 1 month duration; or bronchitis, pneumonitis, or esophagitis)
Histoplasmosis, disseminated or extrapulmonary
Isosporiasis, chronic intestinal (>1 month's duration)
Kaposi's sarcoma
Lymphoma, Burkitt's (or equivalent term)
Lymphoma, immunoblastic (or equivalent term)
Lymphoma, primary, of brain
<i>Mycobacterium avium</i> complex or <i>M. kansasii</i> , disseminated or extrapulmonary
<i>Mycobacterium tuberculosis</i> , any site (pulmonary or extrapulmonary)
<i>Mycobacterium</i> , other species or unidentified species, disseminated or extrapulmonary
<i>Pneumocystis carinii</i> pneumonia
Pneumonia, recurrent
Progressive multifocal leukoencephalopathy
<i>Salmonella</i> septicemia, recurrent
Toxoplasmosis of brain
Wasting syndrome due to HIV

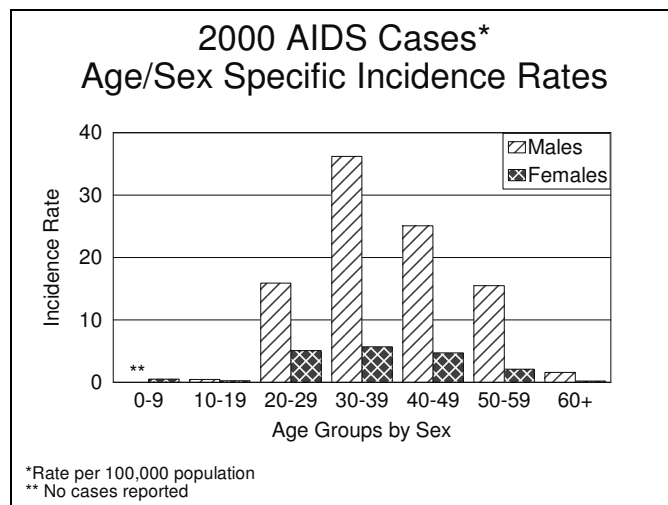
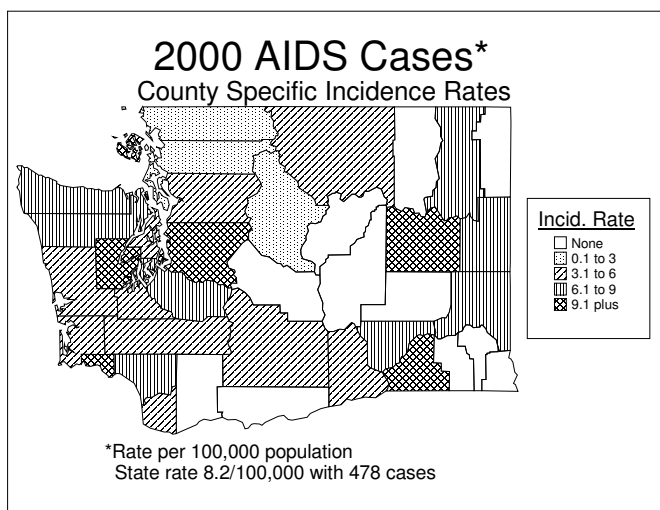
* Added in the 1993 revision of the case definition

In 2000, 478 cases of AIDS were reported. This represents a 27% increase from cases reported in 1999 and the first increase since the change in the case definition occurred in 1993. A number of factors may have contributed to this increase in cases. Enhanced lab-based reporting was initiated when asymptomatic HIV infection became reportable which contributed to enhanced ability to recognize AIDS cases. Additionally, surveillance of all HIV-related conditions received increased attention as a result of the new reporting requirement. Trends being seen in Washington State are being seen in other parts of the country, and have been attributed to a combination of factors, including failing therapies due to treatment-resistant viral strains; late HIV testing; inadequate access to and adherence to treatment in some populations; and recent increases in HIV incidence in some risk groups.

Acquired Immunodeficiency Syndrome cont.

The 2000 state incidence rate of 8.2 per 100,000 population compares favorably to a national incidence rate of 15.5/100,000 (50 states and the District of Columbia). In 2000, AIDS cases were reported from 28 counties. For counties with at least 5 cases, the highest incidence rate was in King County (13.8/100,000), followed by Mason County (12.4/100,000), Walla Walla County (9.1/100,000), and Clallam, Pierce and Spokane Counties (all 8.9/100,000).

from 5% of AIDS cases reported prior to 1994 to 11% of cases reported since January 1, 1994. Among adult/adolescent cases reported in 2000, 27 women (36%) acquired HIV infection through heterosexual contact with an HIV-positive partner. Cases among injection drug users represented 34% of female cases. Risk was unreported for 21 (28%) women. For both males and females, age-specific incidence rates were highest among persons 30-39 years of age (36.2/100,000 for men and 5.7/100,000 for women).

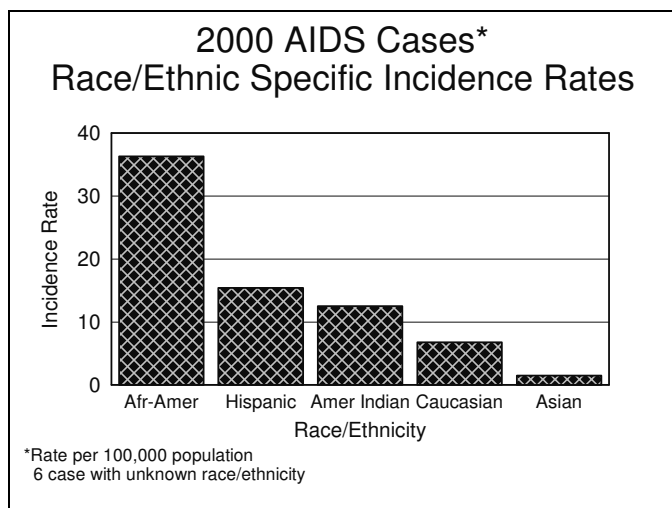


Of the 478 AIDS cases reported, 402 (84%) were among males and 76 (16%) were among females. Male-to-male sexual contact continued to account for the majority (54%) of all AIDS cases reported in 2000. Among adult and adolescent men, 292 cases (73%) were attributable to male-to-male sexual contact, with or without concurrent injection drug use. Drug use alone accounted for 44 (11%) cases among men, and 34 cases (8%) were attributable to a combined risk of male-to-male sexual contact and injection drug use. Risk was unreported or unconfirmed in 50 cases (12%).

As in previous years, racial and ethnic minorities were disproportionately represented among AIDS cases. Although Caucasians accounted for a majority (69%) of AIDS cases reported in 2000, the proportion of cases among minorities has grown from 16% of cases reported 1982 – 1993 to 25% of cases reported since January 1994. In 2000, incidence rates were highest among African-Americans (36.3/100,000), Hispanics (15.4/100,000) and Native Americans (12.5/100,000). The incidence rate among Caucasians was 6.8/100,000 and among Asians 1.5/100,000.

The proportion of AIDS cases among women has more than doubled since 1994, increasing

AIDS cont.



Of the 478 cases reported in 2000, 43 are known to have died as of March 1, 2000. Antiretroviral use has markedly increased the survival rate among AIDS patients diagnosed since 1995. In 2000, the numbers of persons living with AIDS in Washington rose to the highest number ever (4,059), an increase of 10% from the previous year.

Acute Pelvic Inflammatory Disease

Acute pelvic inflammatory disease (PID) comprises a spectrum of diseases of the upper genital tract among women and may include any combination of endometritis, salpingitis, tubo-ovarian abscess, and peritonitis. Acute PID excludes a case testing positive for either gonorrhea or *Chlamydia*.

PID is due to an ascending infection from the endocervix and vagina to the endometrium, fallopian tubes, and/or contiguous structures. Empiric treatment of PID should be initiated in sexually active young women and others at risk of STD when no other cause is found and the minimum criteria for diagnosis are met: lower abdominal, adnexal, and cervical motion tenderness. Diagnosing acute PID is difficult. No combination of symptoms is typical, and severity ranges from none to extreme.

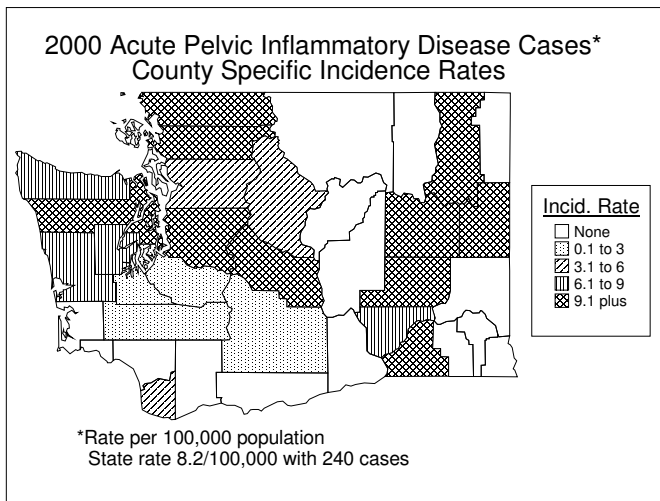
There is no single treatment regimen for PID. Centers for Disease Control and Prevention (CDC) recommends specific combinations of antibiotics effective against a wide range of PID bacteria. About 20% of untreated PID results in chronic pelvic pain and scarring. A prior episode of PID increases the risk of another episode; as many as a third of women who have had PID will have the disease at least one more time.

Women with recurrent episodes of PID are more likely to suffer long-term consequences such as infertility, tubal pregnancy, or chronic pelvic pain. A woman who has had PID has a 6 to 10-fold risk of tubal pregnancy, which is life-threatening to the woman and almost always fatal to her fetus.

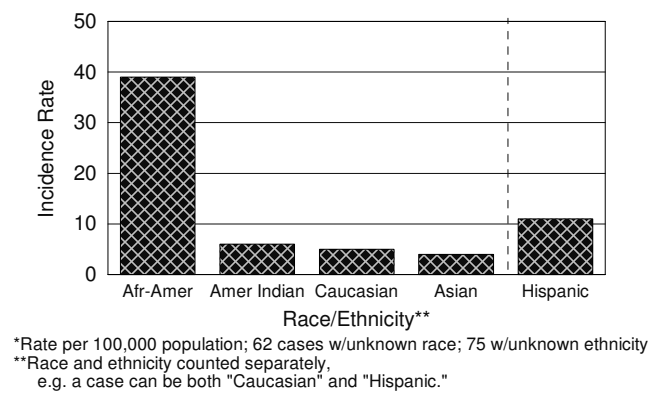
Acute Pelvic Inflammatory Disease cont.

There were 240 cases of acute PID (plus 119 gonococcal PID and 325 chlamydial PID cases) reported in Washington State in 2000 for an incidence rate of 8/100,000 females. In 1999 there were 297 cases (10/100,000).

a separate ethnicity; the Hispanic incidence rate was 11/100,000.

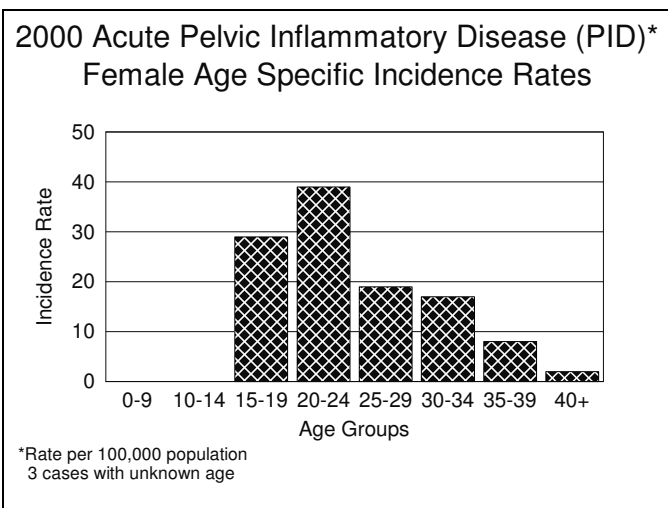


**2000 Acute Pelvic Inflammatory Disease (PID)*
Female Race/Ethnic Specific Incidence Rates**



Acute PID was dropped as a legally notifiable condition in 2000 and is summarized here for the last time.

The highest age-specific case rate occurred in the 20-24 year old age group (39/100,000).

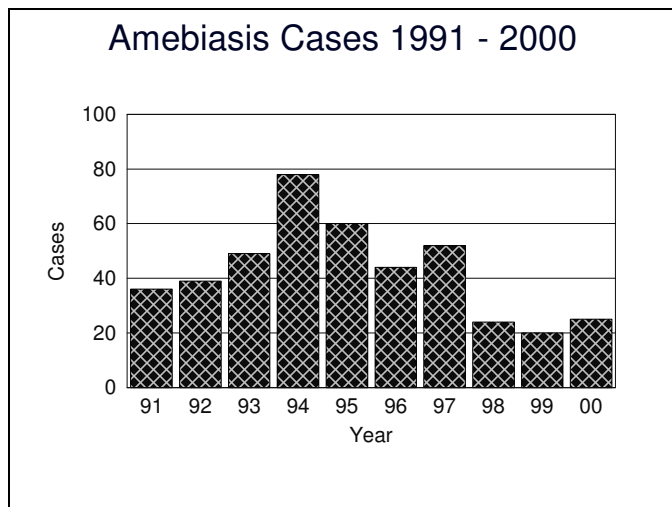


Of the cases reporting race/ethnicity, African-American females had the highest incidence rate (39/100,000). Hispanics are counted as

Amebiasis

Amebiasis is an infection with the protozoan *Entamoeba histolytica*. About 90% of infections are asymptomatic. The remaining 10% display a spectrum of clinical syndromes ranging from dysentery to abscesses of the liver or other organs. *E. histolytica* is acquired by ingesting cysts from fecally contaminated water, food, or hands. Foodborne exposure can occur when handlers are shedding cysts or if food is fecally contaminated by soil, water, or fertilizer. Other sources of exposure include oral-anal sexual practices, and, rarely, direct rectal inoculation through colonic irrigation devices. Infectious cysts can be shed in the stool and can survive for several weeks in a moist environment.

There were 25 cases of amebiasis reported in 2000 (incidence rate 0.4/100,000). There were no deaths reported.



Amebiasis is no longer reportable in Washington except as an outbreak.

Botulism

Spores from *Clostridium botulinum* are found worldwide in soil, agricultural products, and animal intestinal tracts. Neurotoxins produced by the bacterium cause three forms of botulism.

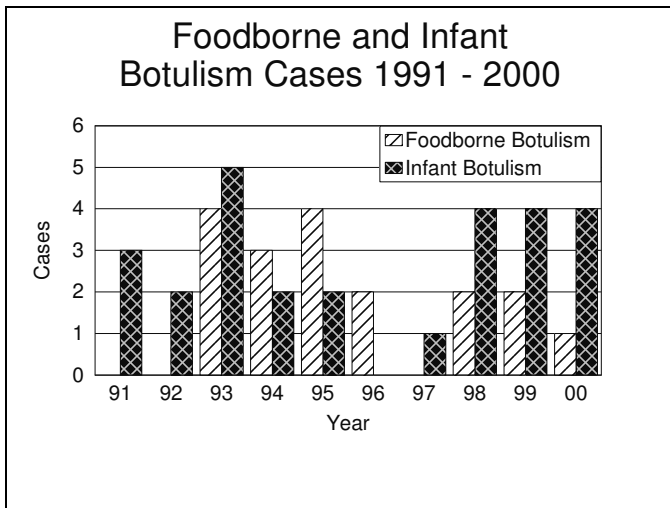
Classical botulism results from eating food contaminated by toxin produced during bacterial growth. Symptoms include weakness of the arms and legs, blurred vision, difficulty speaking and swallowing, and constipation sometimes preceded by diarrhea. Severe cases have respiratory paralysis requiring mechanical ventilation. With supportive care mortality is 5-10%; recovery may take months. The last fatal case in Washington was in 1983.

Toxin can be detected in stool, serum, or food samples. For immediate testing of food or clinical samples, contact Communicable Disease Epidemiology's 24 hour number (206 361-2914 or 1-877-539-4344). Antitoxin treatment for food-associated botulism cases can also be arranged. Contaminated food should be tested to confirm the source and to prevent additional cases.

Proper canning with pressure-cooking will prevent botulism. Using water-bath canning methods (particularly for food not sufficiently acidic) or holding foods unrefrigerated under low oxygen conditions can result in formation of botulism toxin. The toxin can be destroyed by cooking food at a full boil for at least 3-5 minutes.

Recent botulism cases in Washington were associated with improperly home-canned asparagus, beets, corn, carrots, spinach, and salsa. There was one food-associated case in 2000.

Botulism cont.



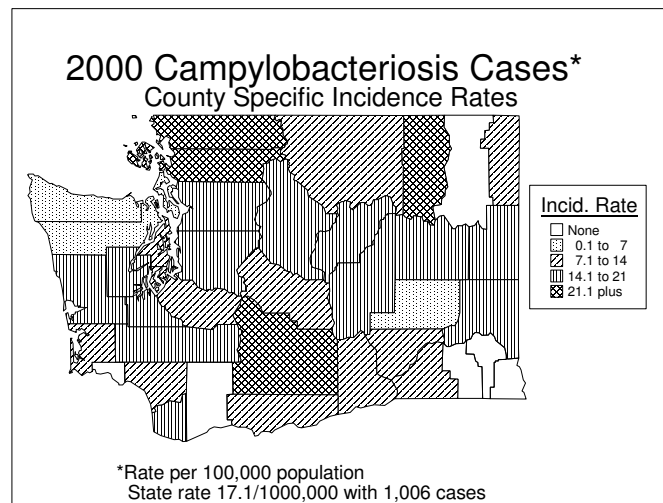
Infant botulism occurs when the organism colonizes the intestine and produces toxin. As its name indicates, infant botulism occurs almost exclusively in children under a year of age. Raw honey consumption has been implicated in some but not all cases of infant botulism, and this product should not be fed to infants. Symptoms usually begin with constipation followed by lethargy, difficulty swallowing, and weakness. Toxin or the organism can be detected in the stool. Treatment is primarily supportive and may require intubation and ventilation. Equine antitoxin is generally not given but clinical use of human-derived botulism antitoxin is being done at tertiary care pediatric hospitals. Four infant botulism cases were reported in 2000.

Wound botulism occurs when the toxin is produced by bacterial growth in body tissues, typically a contaminated wound. Treatment is wound debridement and antitoxin. In 2000 no cases of wound botulism in Washington were associated with subcutaneous injection of heroin. This risk was first reported in the western United States from California (JAMA 1998;279:859-863).

Campylobacteriosis

Campylobacteriosis, an acute bacterial disease, normally lasts 2-5 days and rarely longer than 10 days. Symptoms are diarrhea, stomach cramps, fever, nausea, and vomiting. Several species cause disease in humans, the most prevalent *Campylobacter jejuni*. Transmission is through fecal contamination of food, person to person, and through direct contact with infected animals (calves, puppies and kittens). It is also spread by raw milk, poultry, meat or cross-contamination of other foods.

In 2000, 1,006 cases of campylobacteriosis were reported for a statewide incidence rate of 17.1 per 100,000 population. High incidence rates were found in Yakima (115 cases, 51.7/100,000) and Whatcom (51 cases, 30.6/100,000) counties. The rate in Ferry was based on small numbers.

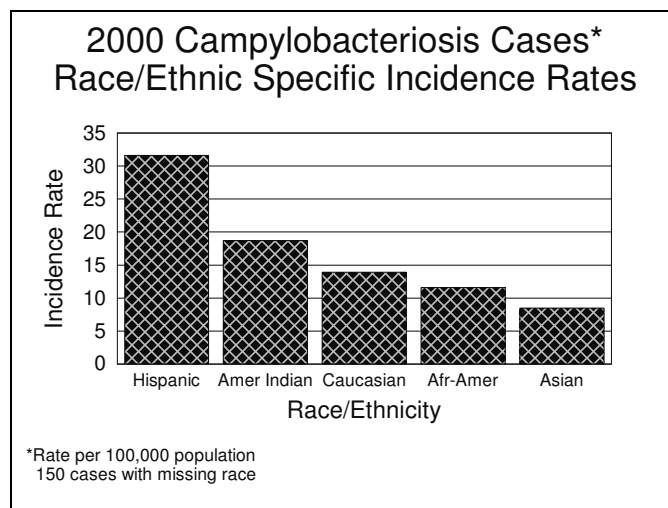
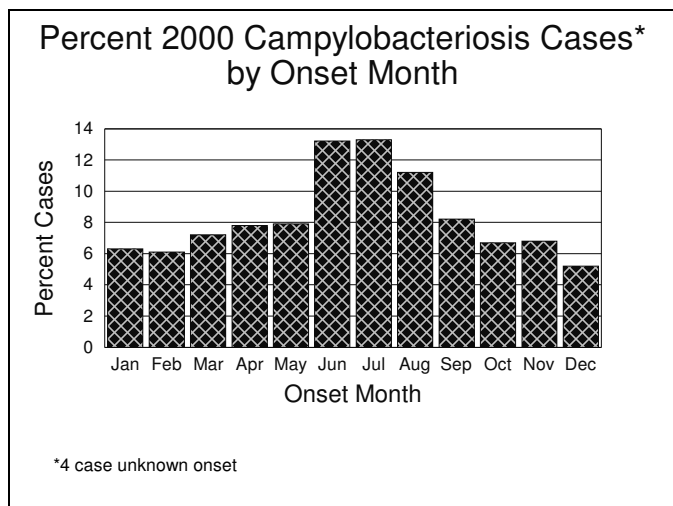


C. jejuni accounted for 54% of the cases and 46% of the cases had unknown serotype; a single case of *C. coli* was reported.

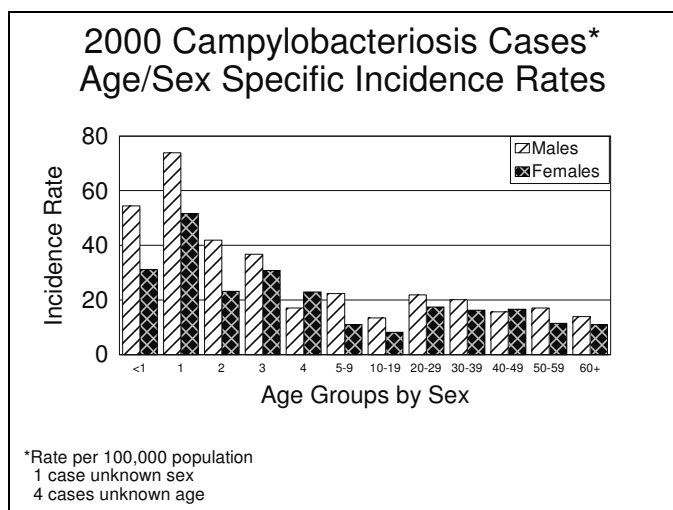
Campylobacteriosis cont.

Cases were more common during summer months, typical of many enteric diseases.

For cases with race/ethnicity information, Hispanics (31.6/100,000) had the highest incidence rate, followed by American Indians (18.7/100,000).



Age-specific incidence rates were greatest for the one year old age group (63.0/100,000). Males had an incidence rate of 19.4/100,000 and females a rate of 14.7/100,000.



Chlamydia

Chlamydia trachomatis is one of four species in its genus. The others are *C. pneumoniae*, a cause of respiratory infections, *C. psittaci*, a pathogen of birds and domestic animals which can cause psittacosis in humans, and *C. pecorum*, a pathogen of domestic animals.

C. trachomatis is the most commonly reported sexually transmitted disease (STD) in Washington. In early stages, 7-21 days after exposure, there may be abnormal genital discharge or pain during urination. Women may also have abdominal pain. *Chlamydia* has been called "the silent STD" because symptoms can be mild or absent. In women, untreated *Chlamydia* is a major cause of pelvic inflammatory disease (PID) that can lead to infertility (particularly with repeat infections) or ectopic pregnancies. An infant can be infected at birth, resulting in neonatal conjunctivitis or chlamydial pneumonia. Complications in untreated men include urethritis, epididymitis, and proctitis.

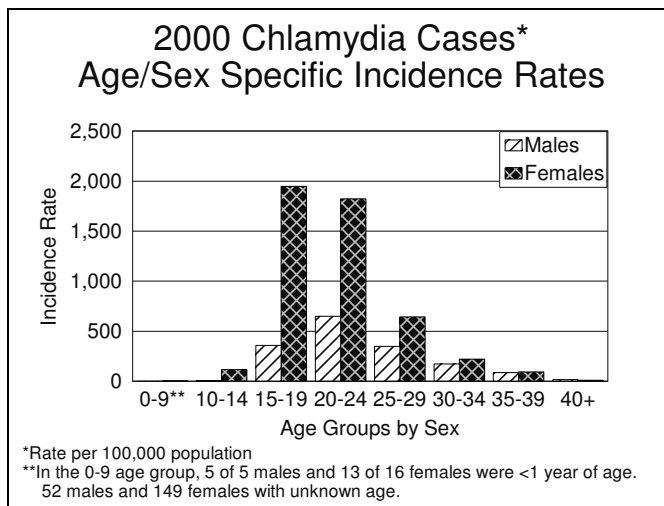
Diagnostic tests and treatment regimens exist for *Chlamydia*. Due to an increased prevalence of *Chlamydia* in patients with gonococcal infections (dual or coinfection), presumptive treatment for *Chlamydia* is recommended for patients with gonorrhea. In 2000, 588 dual infections were diagnosed.

In 2000, 13,066 *Chlamydia* cases (9,582 female including 325 cases of chlamydia PID and 3,484 male) were reported for a rate of 224 per 100,000 population. This compares to 11,964 (208/100,000) in 1999. Screening efforts aimed at women (Region X Infertility Prevention Project) account for the high female to male ratio (2.8:1).

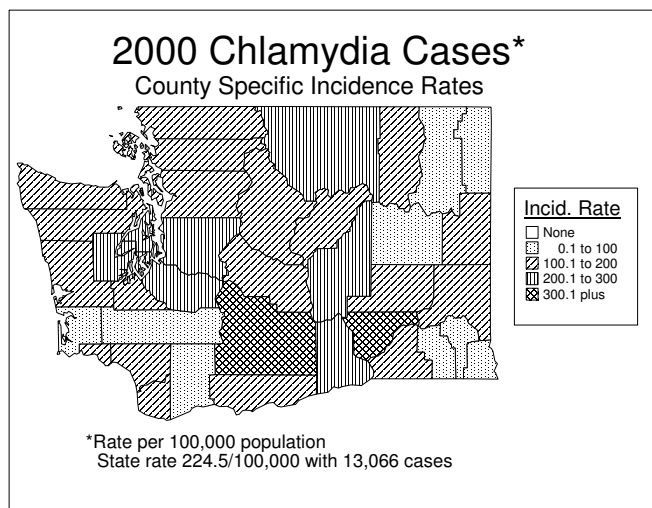
A recent increase in *Chlamydia* cases can be attributed to several factors including:

- More sensitive laboratory techniques

- Increase in routine screening and partner referral
- Improved surveillance and reporting, and
- Increase in risky sexual behaviors



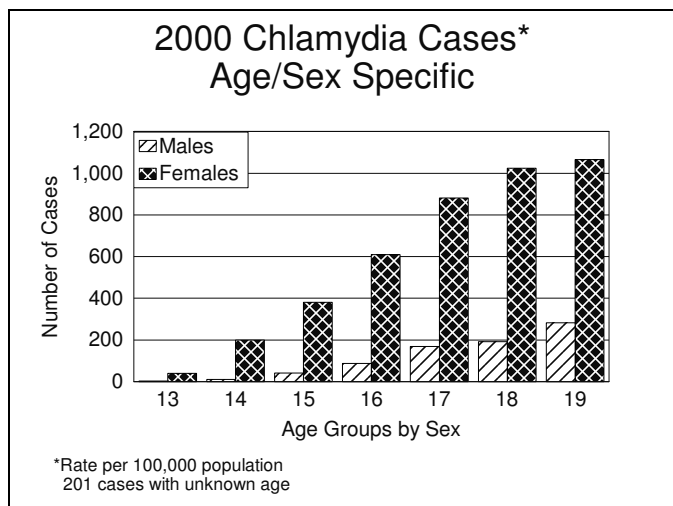
All 39 Washington counties reported cases of *Chlamydia*. Highest incidence rates were in Franklin (416/100,000), and Yakima (377/100,000) counties.



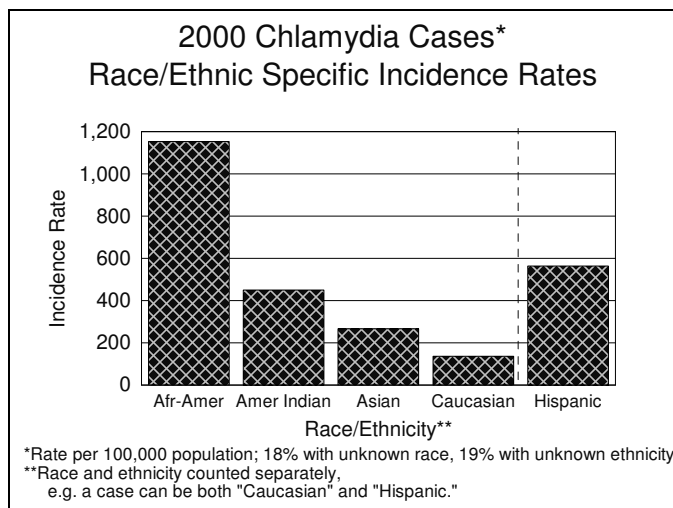
Chlamydia can be a problem for sexually active adolescents (36% of reports, 4,734 cases). For 15-19 year olds the incidence rate was 1,946/100,000 for females and 360/100,000 for males. Among 20-24 year olds the rate was 1,823/100,000 for females and 648/100,000 for males.

Chlamydia cont.

Screening more often than once a year should be considered for adolescents.



For cases with race/ethnicity reported, African-Americans had the highest incidence rate (1,153/100,000) followed by American Indians (450/100,000), Asians (266/100,000) and Caucasians (136/100,000). Hispanics, counted as a separate ethnicity, had an incidence rate of 563/100,000.



Of 1,209 chlamydial repeaters (> 1 episode in 12 months) over half (620) were teenagers and 10% of females (1,002 cases) were repeaters.

E. coli, Enterohemorrhagic

Enterohemorrhagic bacteria such as *E. coli* O157:H7 cause both epidemic and sporadic cases of diarrhea. Infections can be asymptomatic but usually involve abrupt diarrhea, often with severe cramping and little or no fever. There may be bloody diarrhea or rare but serious complications such as hemolytic-uremic syndrome (HUS). Management is supportive. Antibiotics shall not be given. Enterohemorrhagic (shiga toxin positive) *E. coli* including O157:H7 and HUS are reportable in Washington.

The typical incubation period for *E. coli* O157:H7 is 3 to 5 days (range 1 to 7). Cattle are the primary reservoir with beef (especially ground beef) the major vehicle for transmission. Other potential exposure sources include unpasteurized milk, cross-contaminated foods, farm products, and contaminated water. Person-to-person transmission can occur in households, day care centers, or nursing homes.

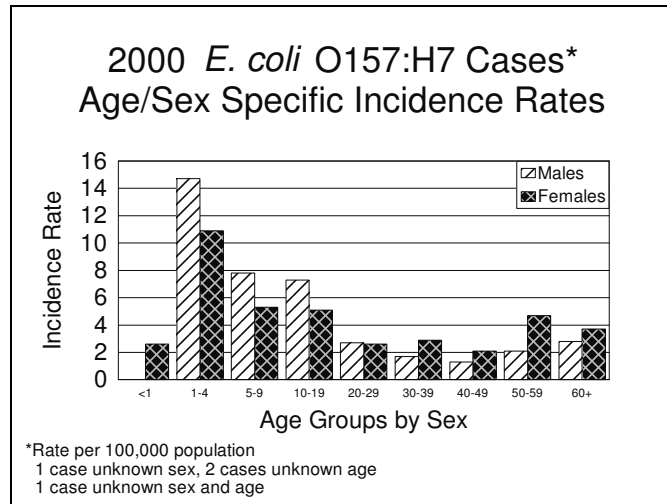
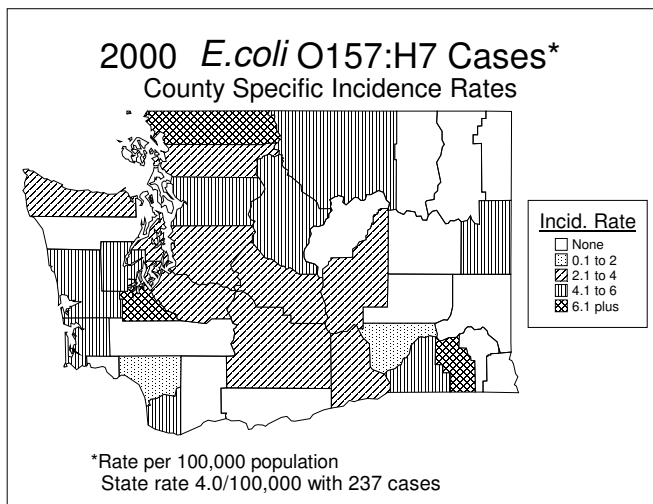
E. coli O157:H7 is non-invasive and fecal leukocytes are often absent, unlike from other infectious causes of bloody diarrhea. Sorbitol-MacConkey agar is used to culture *E. coli* O157:H7. Rapid agglutination identifies antigens such as O157 and H7. Cultures may be negative late in the disease course when complications occur. A few cases continue to carry the organism in their intestines for weeks after symptoms end.

E. coli O157:H7 was first identified in Washington in 1986 during outbreaks in Seattle, Spokane, and Walla Walla. In 2000 there were 237 cases, for an incidence rate of 4.0/100,000 population, with one death. This was the highest case count since 1993 but was not due to a large outbreak or to an increase in a single county or age group.

E. coli cont.

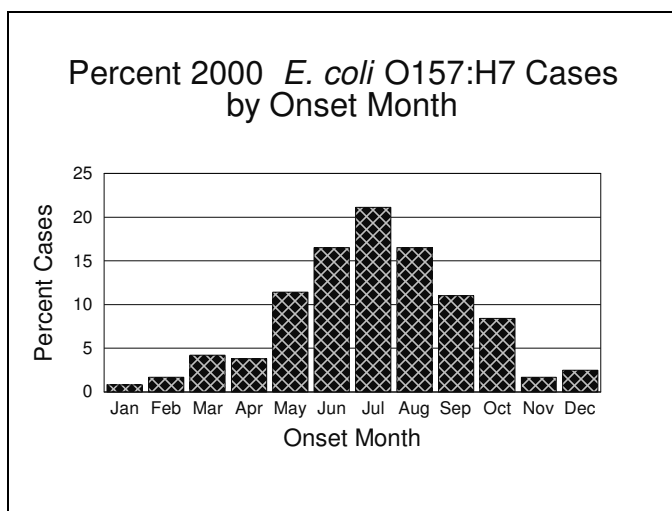
There was also one case each of O121:H19 and O-rough:H11.

adults may have less severe illness and not seek medical care.



In Washington, *E. coli* O157:H7 case counts usually increase in warmer months. A summer peak has been reported from other areas of the country. In 2000, cases were high from June through August.

Although *E. coli* O157:H7 outbreaks have been associated with commercial products and restaurants, most cases appear to be related to home cooking. Safe food handling and attention to personal hygiene can reduce the risk of *E. coli* O157:H7 infections. Recommendations to reduce risk include: completely cook meat, particularly ground beef (until no pink color remains); thoroughly wash hands, utensils, and surfaces after handling raw meat or poultry; do not consume raw (unpasteurized) milk or raw milk products; and thoroughly wash hands after using the toilet or changing diapers. Those ill with diarrhea should not prepare food for others, attend school or day care, or swim in lakes or pools.



In 2000, children one to four years of age accounted for 17% of cases (incidence rate 12.9/100,000). Age-specific rates do not necessarily reflect disease frequency, since

Outbreaks in Washington have been associated with fast food hamburgers (501 cases in 1993) (JAMA 1994;272:1349-53), home cooked ground beef (11 cases in 1994), commercial dry-cured salami (20 cases in 1994) (MMWR 1995;44:157-60), commercial apple juice (28 cases in 1996) (MMWR 1996;45:975), and swimming in lake water (28 plus 8 secondary cases in 1999).

Foodborne Outbreaks

Foodborne disease surveillance enhances early identification of contaminated foods and faulty food preparation practices. Prompt response by local health jurisdictions can reduce illness and secondary spread of infections. A complaint of two or more ill persons with epidemiologic and/or laboratory evidence implicating a common food as the source of the illness is defined as a foodborne outbreak.

Local health jurisdictions are required to submit a written report to the DOH for a cluster or outbreak of foodborne disease within seven days of completing the investigation, whether or not confirmatory laboratory tests have been done. Reporting forms are available electronically at <http://www.doh.wa.gov/ehp/sf/foodpubs.htm> or from the Communicable Disease Epidemiology section (206-361-2914, toll free 877-539-4344).

In 2000, 66 foodborne outbreaks with 938 ill persons were reported. Most reported outbreaks (51%) occurred in King County. The majority of reported outbreaks were associated with restaurant-prepared food. More than 50% involved three or fewer ill persons. Several large outbreaks occurred including one linked to a commercially contaminated bean dip resulting in 212 cases of shigellosis in Washington residents. Nine people in three groups were diagnosed with paralytic shellfish poisoning (PSP) after eating recreationally harvested mussels.

Table 1. Number and Percent of Outbreaks and Ill Persons by Place of Preparation

Place	Outbreaks		Ill Persons	
	#	%	#	%
Restaurant	50	76%	479	51%
Home	4	6%	33	3%
Caterer	4	6%	78	8%
Unsafe product, eaten raw	3	5%	9	1%
Grocery store/in-store deli	2	3%	6	1%
Contaminated product	1	1%	212	23%
Other*	2	3%	121	13%
Totals:	66	100%	938	100%

*Includes local cruise ship and university function.

The etiologic agent was confirmed by laboratory testing in 9 (14%) outbreaks. The remaining outbreaks were classified as "probable."

Table 2. Number & Percent of Outbreaks and Ill Persons by Agent

Agent*	Outbreaks		Ill Persons	
	#	%	#	%
Bacterial				
<i>B. cereus/C. perfringens</i>	7	11%	28	3%
Enterotoxigenic <i>E. coli</i>	1	<2%	100	10%
<i>Salmonella</i>	2	3%	6	<1%
<i>Staphylococcus aureus</i>	1	<2%	3	<1%
<i>Shigella</i>	1	<2%	212	22%
Non-O157:H7 shiga-toxin <i>E. coli</i>	1	<2%	18	2%
Chemical				
Histamine	2	3%	4	<1%
PSP	3	4%	9	<1%
Viral				
Norwalk-like virus	16	24%	154	16%
Hepatitis A	1	<2%	4	<1%
Undetermined	31	47%	400	42%
Totals:	66	100%	938	100%

*Includes lab confirmed outbreaks and outbreaks with cases whose clinical symptoms match a given agent but lack lab confirmation.

Foodborne Outbreaks cont.

A specific food item causing illness could not be identified in 18 (27%) of the outbreaks. Poultry was associated with 12 (18%) outbreaks; fresh produce was linked to 9 (14%) outbreaks. The most frequently noted contributing factors identified by environmental field investigators are listed in Table 3.

Table 3. Number and Percent of Selected Contributing Factors

Factor*	Number	Percent**
Contamination factors		
Bare-hand contact	18	27%
Ill food handler	11	17%
Cross contamination	6	9%
Unknown	11	17%
Proliferation/Amplification factors		
Allowing foods to remain at room temp.	10	15%
Slow cooling	8	12%
Foods prepared > 1/2 day before serving	4	6%
Survival factors		
Inadequate time or temp. in reheating	10	15%
Inadequate time or temp. in cooking	8	12%

*An outbreak may have more than one factor.

**Percent of total outbreaks (n=66)

Genital Herpes

Within the human herpes virus family there are two serotypes of the herpes simplex virus (HSV), herpesvirus type 1 (HSV-1) and herpesvirus type 2 (HSV-2). HSV-1 is usually associated with oral herpes (cold sores or fever blisters) and HSV-2 with genital herpes. However, HSV-1 or HSV-2 can infect either site. The virus remains in the body for life causing periodic symptoms in some people.

Serologic surveys indicate that the prevalence of HSV-2 among adults approaches 25% in the United States. Herpes can be transmitted by an infected person with no noticeable symptoms. People with oral herpes can transmit the infection to a partner's genital area during oral-genital sex.

Asymptomatic and subclinical infections are common and symptoms of genital herpes vary widely, in most studies only 10 – 25% of those with HSV-2 report symptoms. When symptoms of a first episode occur, they usually appear 2 to 21 days after contact with an infected partner. Small fluid-filled sores appear where the virus entered the body and may itch, burn, or be painful. These initial sores heal in 1 to 2 weeks and rarely leave scars. Symptoms can recur at the initial infection site. The cause of reactivation is not known. Later outbreaks usually have fewer sores, heal faster, and are less painful than the first infection. Genital herpes, like other genital ulcer diseases, increases the risk of acquiring HIV, the virus that causes AIDS. Persons with HIV can have severe herpes outbreaks.

Genital Herpes cont.

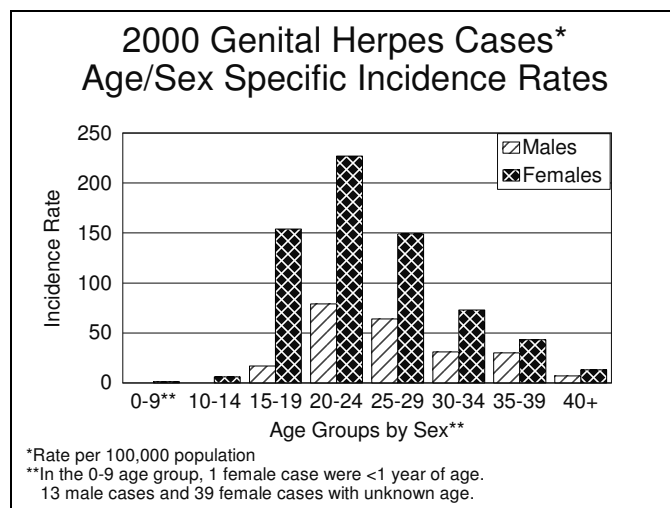
A pregnant woman can transmit herpes as a child passes through the birth canal, causing serious infection or death of the newborn. Risk is highest if the initial infection is during pregnancy. Pregnant women with herpes need careful prenatal screening and sometimes delivery by Caesarian section.

Diagnosis of herpes is made through clinical observations of typical lesions and/or by laboratory confirmation. Antiviral drugs partially control the frequency and severity of outbreaks, however, they are not a cure and do not rid the body of the virus.

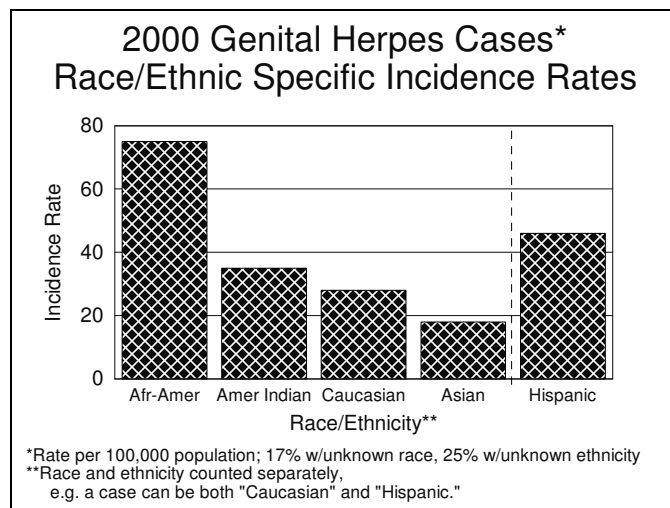
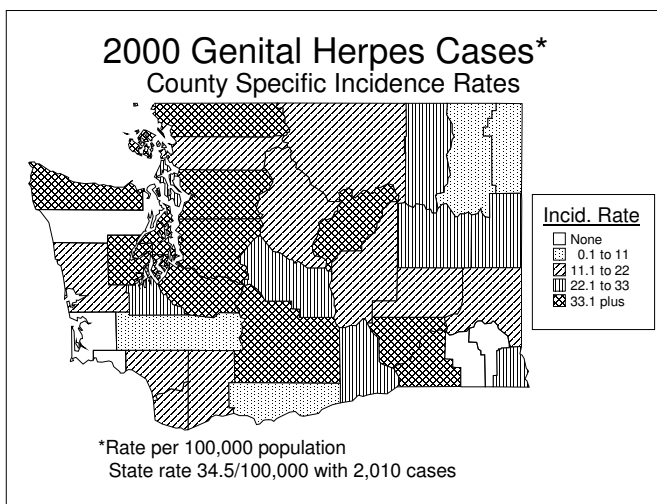
To prevent duplicate morbidity only a patient's first disease episode is reportable in Washington State. In 2000, 2,010 cases of genital herpes (545 males and 1,465 females) were reported for an incidence rate of 35/100,000. Included in the total is one neonatal infection. This compares to 1,952 (34/100,000) cases (2 neonatal) in 1999.

Six counties (King, Pierce, Snohomish, Yakima, Kitsap, and Spokane) accounted for 76% of the State total.

The highest age-specific incidence rates occurred among 20-24 year old females (227/100,000) followed by 15-19 year old women (154/100,000).



For the cases for whom race/ethnicity was reported, African-Americans had the highest incidence rate (75/100,000) followed by American Indians (35/100,000), Caucasians (28/100,000), and Asians (18/100,000). Hispanics are counted as a separate ethnicity. The Hispanic incidence rate was 46/100,000.



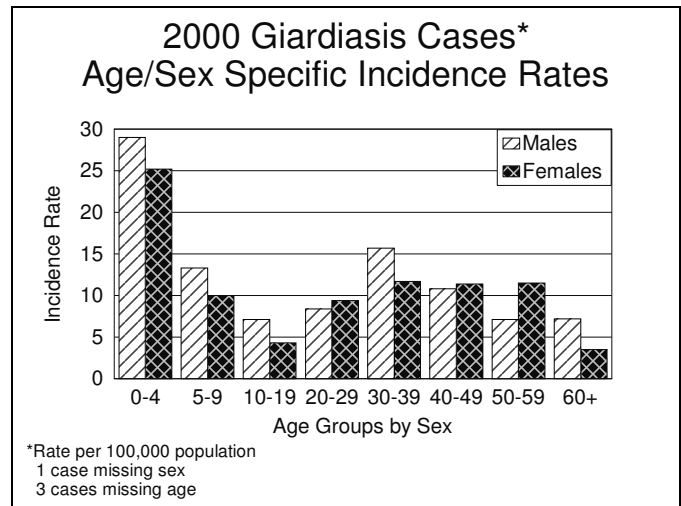
Giardiasis

Giardia lamblia, a flagellate protozoan, can infect the upper small intestine. Patients may be asymptomatic or have chronic diarrhea, cramps, bloating, steatorrhea, fatigue, and weight loss, lasting weeks to months; communicability is for the entire period of the illness. The incubation period is 5 to more than 25 days (median 7 to 10 days).

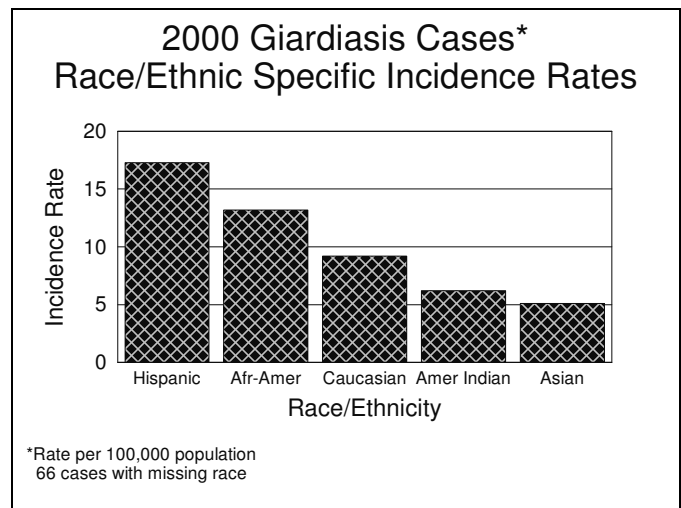
Humans and animals (beavers, puppies, and kittens) are reservoirs. Person-to-person transmission can occur in day care centers, by not washing hands thoroughly, or by oral-anal sexual contact. Fecally contaminated water or food may cause outbreaks. An increase in cases during warmer months is typical and may be due to drinking or swimming in untreated water infected by wild animals. Asymptomatic individuals unaware of their infection are probably more responsible for transmission than are individuals with diarrhea.

In 2000, 622 cases of giardiasis were reported (incidence 10.6/100,000) with one death. The highest incidence rate was in Jefferson County (34.7/100,000).

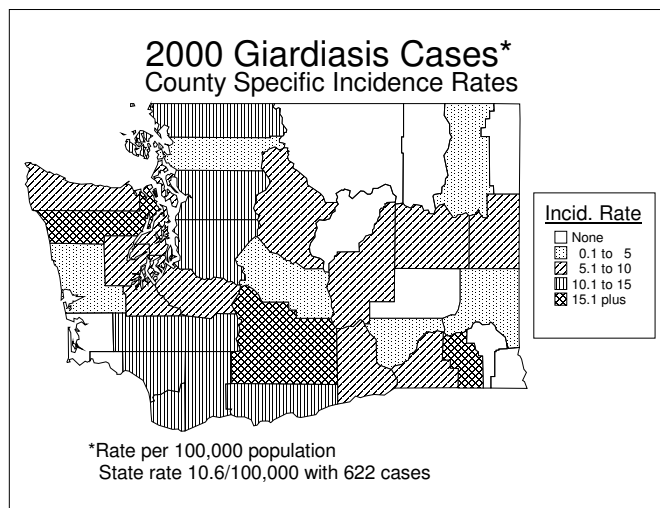
Sex-specific incidence rates for males and females were similar. Age-specific incidence rates were highest in children under five years of age.



The highest incidence rate was in the Hispanic population (12.3/100,000).



In 2000, 6% of cases attended day care and 4% had a household contact attending or working in a day care facility. Careful handwashing is important after using the toilet or changing a diaper.



Gonorrhea

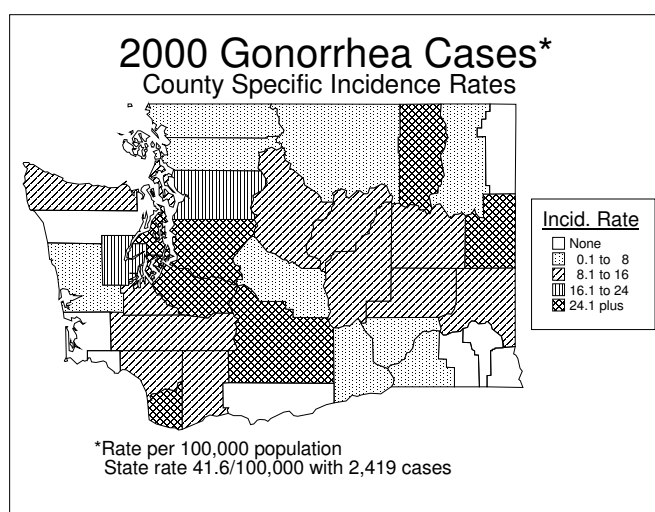
Gonorrhea is caused by *Neisseria gonorrhoeae*, a complex fragile bacterium that infects only humans. *N. gonorrhoeae* is transmitted through vaginal, oral, or anal sex with an infected partner. If symptoms develop, they usually appear within 2-10 days after exposure. Symptomatic women usually have abnormal vaginal discharge or painful urination; however, about half of women have no symptoms. Men usually have a penile discharge and a burning sensation during urination that may be severe.

Untreated gonorrhea can spread through the blood and infect the heart valves, joints, or brain. For females the most common consequence is pelvic inflammatory disease (PID) which can cause infertility, ectopic pregnancy, and chronic pelvic pain. In 2000, 119 cases of gonococcal PID were reported. For males complications include epididymitis with pain and swelling within the scrotum. Gonococcal eye infections may result from mother-to-infant transmission during birth, but these are rare in the United States where postpartum ocular prophylaxis is used (it is mandated by regulations in Washington State).

Diagnostic tests and effective treatment are readily available. Selection of treatment requires consideration of the anatomic site of infection, resistance of *N. gonorrhoeae* strains to antimicrobials, and the possibility of concurrent *Chlamydia* infections. Because coinfections are common, gonorrhea treatment should also be effective against *Chlamydia*. In 2000, 24% of gonorrhea cases (588) were diagnosed with coinfections.

In 2000, 2,419 cases of gonorrhea (1,341 males and 1,078 females) were reported for an incidence rate of 42/100,000.

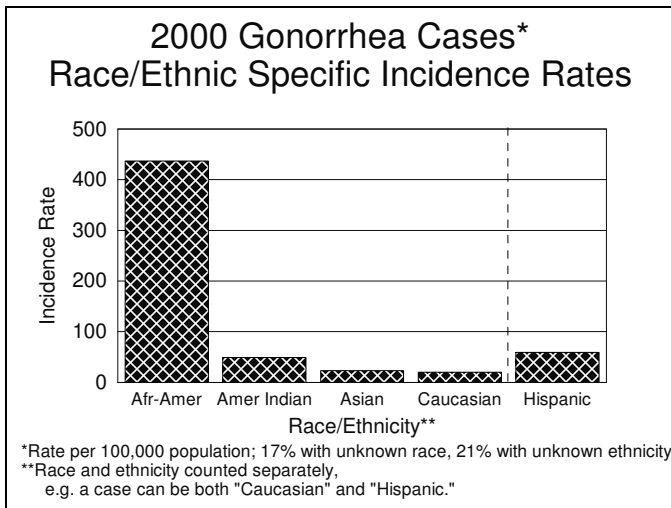
There were nine counties with no reported cases of gonorrhea while King and Pierce counties accounted for 73% of the State's morbidity. Pierce County had the highest incidence rate (76/100,000).



Gonorrhea is highest among sexually active adolescents and young adults. The highest incidence rate for males occur in the 20-24 (157/100,000) and 25-29 (117/100,000) age groups. The highest rates for females are in the 20-24 (186/100,000) and 15-19 (180/100,000) age groups.

Of those cases reporting race/ethnicity, African-Americans had the highest incidence rate (437/100,000) followed by American Indians (49/100,000), Asians (23/100,000), and Caucasians (20/100,000). Hispanics are counted as a separate ethnicity; the Hispanic incidence rate was 59/100,000.

Gonorrhea cont.



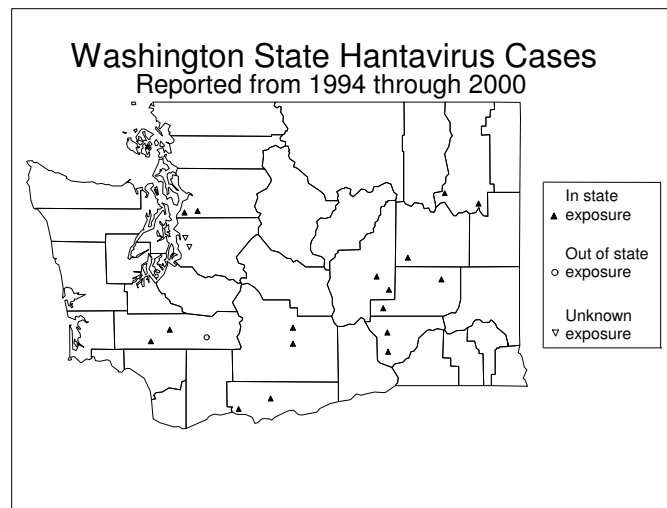
Of 162 gonococcal repeaters (more than one episode in a 12-month period), 24% (39) were teenagers. Seven percent of females diagnosed with gonorrhea (75 of 1,078) were repeaters. Repeat infections are one of the risk factors associated with infertility.

Hantavirus

Hantaviruses with rodent reservoirs were identified in Asia as causes of hemorrhagic fevers. A new hantavirus was recognized in a 1993 outbreak of severe respiratory illnesses in southwestern United States. Deer mice, the reservoir, are found in primarily rural areas throughout western states. Limited trapping suggests low rates of hantavirus infection in Washington rodents.

Hantavirus pulmonary syndrome (HPS) begins as a nonspecific illness resembling influenza or gastroenteritis. The CBC typically is abnormal, with a left shift, presence of myelocytes or metamyelocytes, low platelets, and hemoconcentration. Patients develop severe respiratory symptoms or adult respiratory distress syndrome, often requiring intubation and mechanical ventilation. Mortality is about 40% even with intensive medical support.

One case of HPS was identified in the State in 2000, bringing the cumulative total to 22 for Washington with eight deaths. There were 279 HPS cases reported in the country through February 2001, including some identified retrospectively before 1993.



Hantavirus cont.

To avoid hantavirus and other infections carried by wild rodents, minimize contacts by removing potential food, water and shelter.

- 1) Eliminate rodents in your home and workplace. Wear gloves and disinfect contaminated material (mix 1 cup bleach to 10 cups water OR use another viral disinfectant) before bagging and discarding material.
- 2) Prevent rodent access to homes and workplaces.
- 3) Remove food sources or nesting sites inside and outside. Properly store pet food, animal feed, or garbage. Remove long grass or trash near dwellings.
- 4) Clean up infested buildings, cabins, and tent-cabins by airing out and wet mopping with disinfectant.
- 5) Avoid recreational exposure by promptly disposing of garbage and by sleeping away from rodent burrows.

Physicians with suspected hantavirus cases can contact the Department of Health (206 361-2914; Toll free 877-539-4344) for assistance obtaining diagnostic tests. Information about hantavirus is available from the CDC (1-800-532-9929).

References:

1. Hantavirus Infection - Southwestern United States: Interim Recommendations for Risk Reduction MMWR July 30, 1993;42:RR-11).
2. Washington State Department of Health Rodent Control; Taking Steps to Prevent Hantavirus. DOH Pub 334-018.

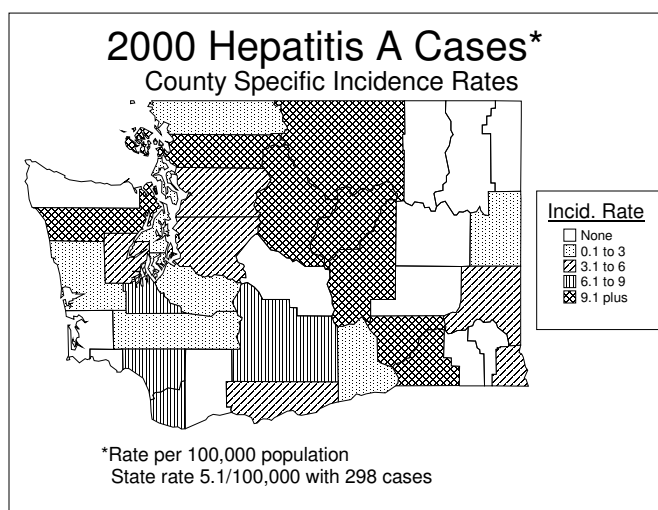
Hepatitis, Acute and Chronic

Acute viral hepatitis is a systemic infection, primarily affecting the liver. Types of viral hepatitis include A, B, C, D, and E, with varying transmission and clinical syndromes. Chronic hepatitis B and C are now reportable.

Hepatitis A (HAV)

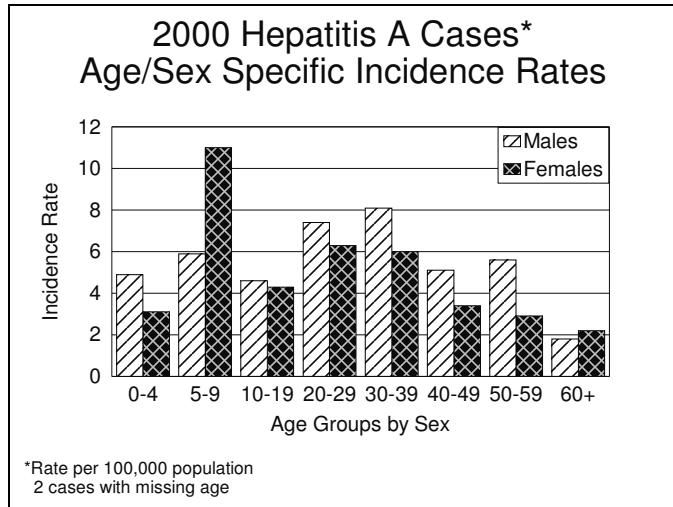
Hepatitis A infection causes fever, anorexia, nausea, abdominal discomfort, and jaundice. Incubation is 2-7 weeks (average 28-30 days). Viral levels in the stool peak 1-2 weeks before symptoms and decline after jaundice occurs. Fecal-oral transmission is through direct contact (including oral-anal sex) or through fecally contaminated water, food, or raw or undercooked shellfish. Hepatitis A vaccine prevents infection for those at risk including those planning extended travel to risk areas and persons with hepatitis C.

In 2000, 298 cases of hepatitis A were reported for an incidence rate of 5.1/100,000 population with one related death. There was a high rate in San Juan County (49.7/100,000).

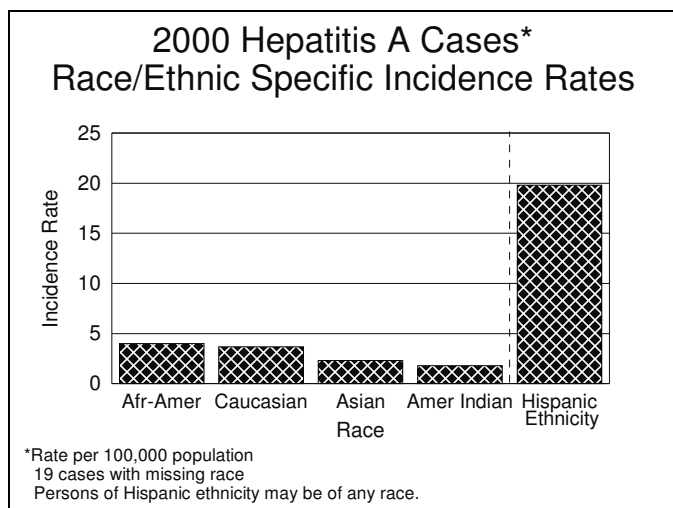


Hepatitis, Acute and Chronic cont.

The sex-specific incidence rate for males was 5.6/100,000 and 4.6/100,000 for females. Age-specific incidence rate was highest in females 5-9 years (11.0/100,000, 23 cases.) Male rates were higher in most other age groups.



Hispanics had the highest incidence rate at 19.8/100,000.



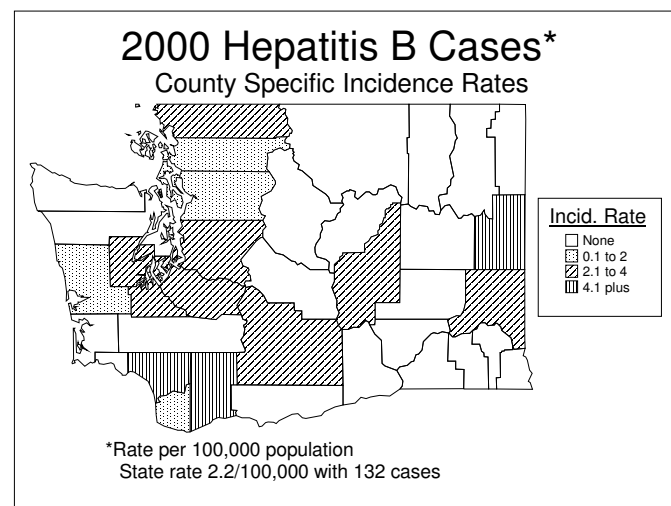
Increased rates of hepatitis A are associated with lower socioeconomic status, day care contact, and illicit drug use, probably reflecting poor sanitation. Other potential exposures

include travel (72 cases) or multiple sexual partners. Hepatitis A rates are higher in western states. Periodic peaks occur worldwide. In a 1987-1989 peak Washington rates reached 70/100,000.

Hepatitis B (HBV)

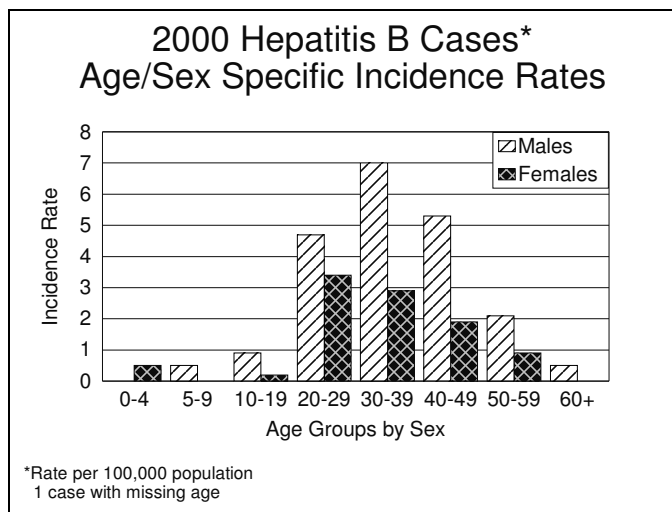
Hepatitis B infection can be transient or chronic (carrier). Symptoms range in severity and include fever, anorexia, nausea, abdominal discomfort, vomiting, rash, and jaundice. Some cases, especially young children, have no symptoms. The fatality rate in hospitalized patients is 1%. Chronic infection, found in less than 1% U.S. adults, may eventually result in cirrhosis or liver cancer. Hepatitis B is transmitted through blood and sexual fluids. A vaccine exists for those at risk including health care workers, injection drug users, dialysis patients, persons with hepatitis C and close contacts of chronic hepatitis B cases.

In 2000, there were 132 cases of acute hepatitis B reported for a statewide incidence rate of 2.2/100,000 population. There were five deaths. The high rate in Skamania County was based on a single case.

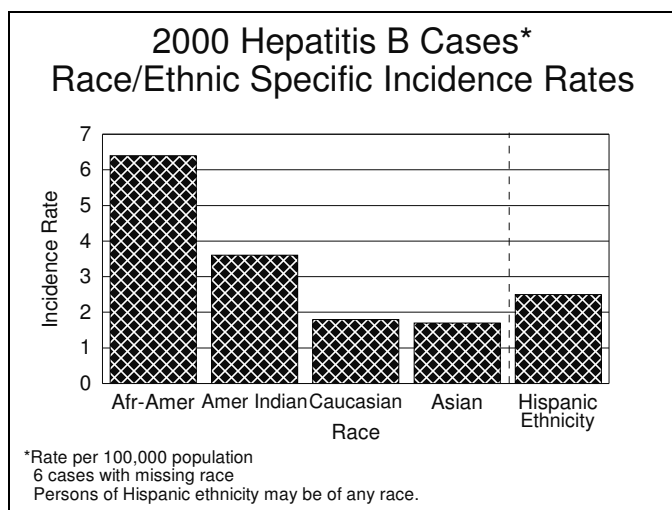


Hepatitis, Acute and Chronic cont.

The statewide sex-specific incidence rate for males was 3.1/100,000 and 1.4/100,000 for females. Age-specific incidence rates were highest in males 30-39 years (7.0/100,000) and 40-49 years (5.3/100,000).



African-Americans had the highest rate.



Potential exposure routes included injection drug use (43 cases), recent dental or surgical work (20 cases), needle sticks (3 cases), and acupuncture or tattooing (4 cases).

Hepatitis B and Hepatitis D (HDV)

Hepatitis D (delta hepatitis) occurs as a coinfection with acute or chronic hepatitis B infection. In acute coinfection mortality is 2-20%. Chronically coinfecting persons also have increased complications and mortality compared to chronic hepatitis B alone.

Anti-HDV antibody titers rise in acute infection and are sustained titer with chronic infection. Hepatitis D should be suspected in HBsAg-positive patients especially if the disease is severe and there were multiple blood exposures such as injection drug use.

In 2000, there was a cluster of hepatitis D cases with 3 deaths in Pierce County associated with injection drug use (MMWR 2001;50:388-90).

Hepatitis C (HCV)

Hepatitis C infection may be asymptomatic or cause nausea, anorexia, vague abdominal discomfort, vomiting, and jaundice. The incubation averages 50 days (range 15-150 days). Hepatitis C is usually less severe in the acute stage than hepatitis B, but progresses more often to chronic infection with complications (e.g., cirrhosis, cancer.) Hepatitis C is transmitted through blood exposure. In Washington, injection drug users are a particular risk group. Transmission is very low from person-to-person and through sexual contact. There is no hepatitis C vaccine at present.

Hepatitis, Acute and Chronic cont.

Acute hepatitis C is included in the hepatitis non A-non B category, making up the majority of that group. In some years, cases in Washington exceed those for hepatitis B.

Hepatitis E (HEV)

Hepatitis E is a self-limiting acute viral disease rare in the US. It may occur in a traveler returning from a country where hepatitis E occurs. Like hepatitis A, transmission is fecal-oral. Prolonged jaundice can occur, but there is no chronic disease. Higher mortality occurs in pregnant women, especially in the third trimester. No hepatitis E cases were reported in 2000.

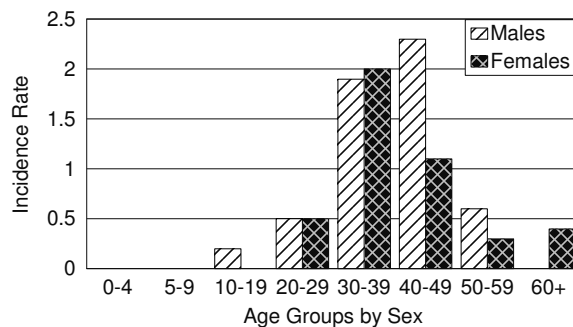
Hepatitis Non A-Non B Category

Hepatitis non A-non B is a category for cases of acute viral hepatitis testing negative for both hepatitis A and hepatitis B. Included are confirmed cases of hepatitis C, and rarely hepatitis D or hepatitis E.

There were 44 cases of non A-non B hepatitis reported in 2000 for a statewide incidence rate of 0.7/100,000 population compared to 5.5/100,000 in 1994. There were no deaths.

The statewide sex-specific incidence rate for males was 0.9/100,000 and for females 0.6/100,000. Age-specific incidence rates were highest in the 30-39 age group (1.9/100,000), and the 40-49 age group (1.7/100,000). There were only seven cases in non-Caucasians.

2000 Hepatitis Non A-Non B Cases*
Age/Sex Specific Incidence Rates



*Rate per 100,000 population

Potential reported exposures included injection drug use (22 cases) and acupuncture or tattooing (3 cases).

Influenza

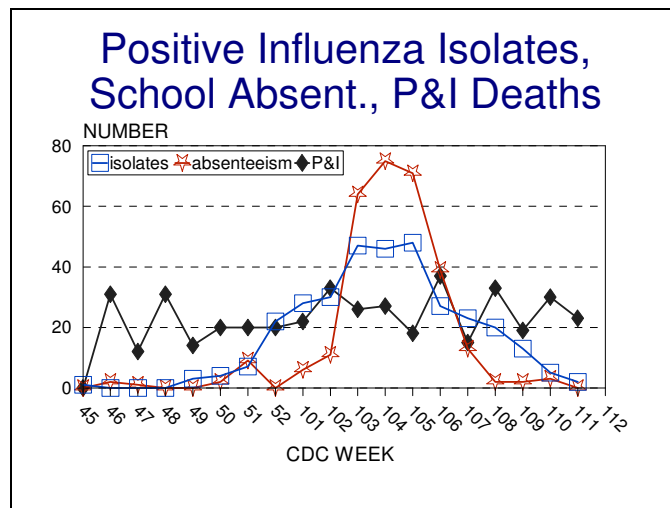
Influenza is a highly contagious viral disease characterized by fever, headache, sore throat, nasal congestion, cough, and myalgia. Gastrointestinal symptoms may occur in 20% of patients, usually small children. The illness lasts about 2-7 days without serious problems in healthy persons.

Influenza is divided into three types: A, associated with epidemics and pandemics; B, usually associated with regional epidemics; and C, appearing as sporadic cases and in minor localized outbreaks. Since influenza A (not B) responds to chemoprophylaxis, it is advantageous to know early in the season which types of influenza are circulating.

Influenza surveillance is conducted each fall from October through May of the following year. Influenza activities were mild nationwide and in Washington for the 2000-2001 season. The greatest state activity occurred during the last two weeks of January and the first week of February.

Twenty-four counties reported at least 1 positive influenza case with 61% of all reported cases from King County and 20% from Spokane County. This may be in part a reflection of sentinel laboratory reporting being greater in these counties.

Laboratories statewide reported 163 (50%) positive isolates for influenza A, and 164 (50%) for influenza B. Of the 69 influenza A subtyped, 81% were A, (H1N1) and 19% were A H3N2. The influenza strains circulating were contained in the 2000-2001 vaccine (A/New Caledonia/20/99-H1N1, A/ Moscow/10/99-H3N2 and B/Sichuan/379/99.



Twenty-nine percent of cases were age 4 years and under, 34% were age 5 thru 19 years, 52% were aged 20 thru 59 and 3% were 60 years or over, 3% had unknown ages. Fifty-two percent of the cases were male.

Despite increased statewide sentinel nursing home surveillance, only one influenza outbreak, from Clark County, was reported in November. Both patients and staff had high vaccination levels.

Surveillance of reported influenza vaccination among sentinel nursing homes showed 84% of patients and 53% of staff* having received the current influenza vaccine.

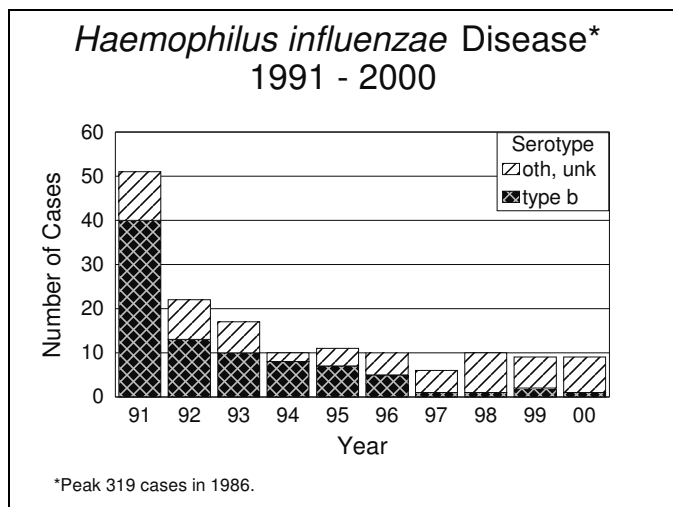
*Staff vaccination reports may be low since staff may see private health care providers for vaccine.

Haemophilus influenzae-Invasive

Most *Haemophilus influenzae* infections are due to type b (Hib). Invasive Hib disease includes meningitis, bacteremia, epiglottitis, and pneumonia. Meningitis is the most common form, accounting for approximately 50%-65% of all cases.

Diagnosis of Hib may be made by isolation of the organism from blood, cerebrospinal fluid (CSF), or any other normally sterile body site. Complications of Hib meningitis including hearing impairment and neurologic sequelae occur in 15-30% of Hib meningitis cases. Pediatric rates of Hib infection and associated complications have dropped dramatically throughout the country since introduction of Hib vaccine; Washington cases peaked in 1986 with 319 cases and 11 deaths.

In 2000, nine cases of *H. influenzae* infection were reported with no deaths. Seven cases were among children less than 10 years of age, two type a, one type f, one untypeable, and three not tested.

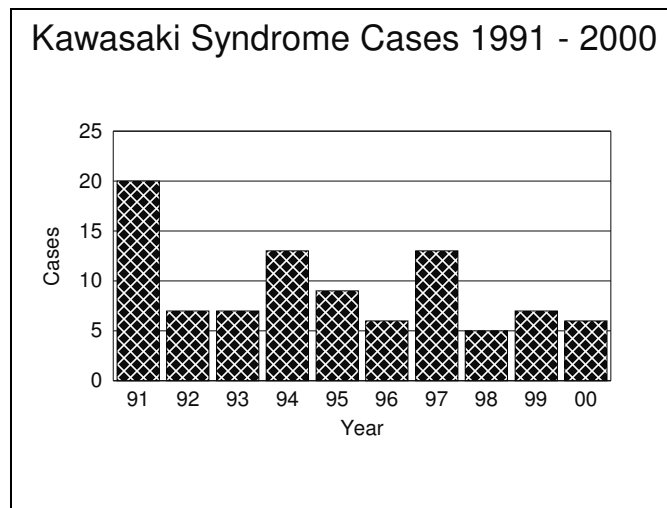


Kawasaki Syndrome

Kawasaki syndrome is an acute pediatric illness of uncertain etiology affecting the blood vessels. The illness typically occurs in children under five years of age and may be more common in boys.

The syndrome is diagnosed for a child with fever for at least 5 days and 4 of 5 symptoms: conjunctivitis, oral changes (such as strawberry tongue, dry cracked lips, or mucosal reddening), changes in the extremities (such as red palms and soles, swelling of the hands and feet, or peeling of the skin around the nails), rash, or swollen lymph nodes in the head and neck. Coronary artery or cardiac damage may occur.

Outbreaks of Kawasaki syndrome can occur. There is no person-to-person transmission. High-dose immune globulin should be given intravenously within 10 days of onset to reduce complications. Six cases were reported with no deaths. One case had coronary artery involvement and two had pericardial effusions. Cases ranged in age from 6 months to 12 years; five were girls.

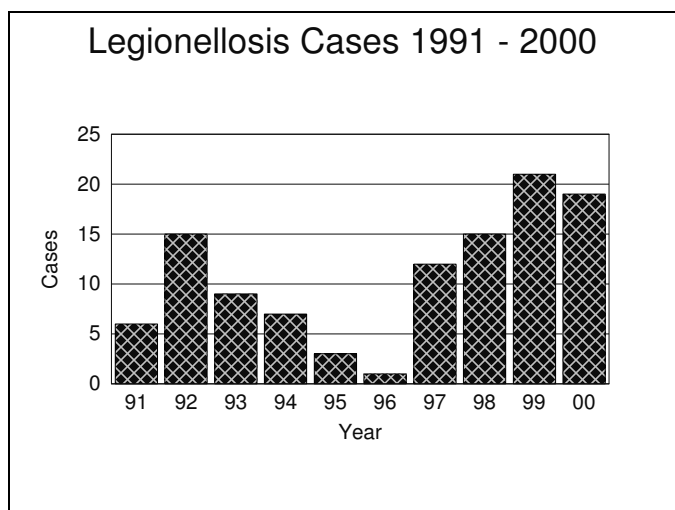


Kawasaki Syndrome is no longer reportable in Washington.

Legionellosis

Various species of *Legionella* (*Tatlockia*), most commonly *L. pneumophila*, cause pneumonia and febrile illness. Other symptoms may be diarrhea, abdominal pain, headache, and neurologic changes. Tests include culture, urinary antigen detection, paired antibody tests, direct fluorescent antibody testing, and PCR. Species isolated in Washington include *L. pneumophila*, *L. micdadei*, and *L. longbeachae*.

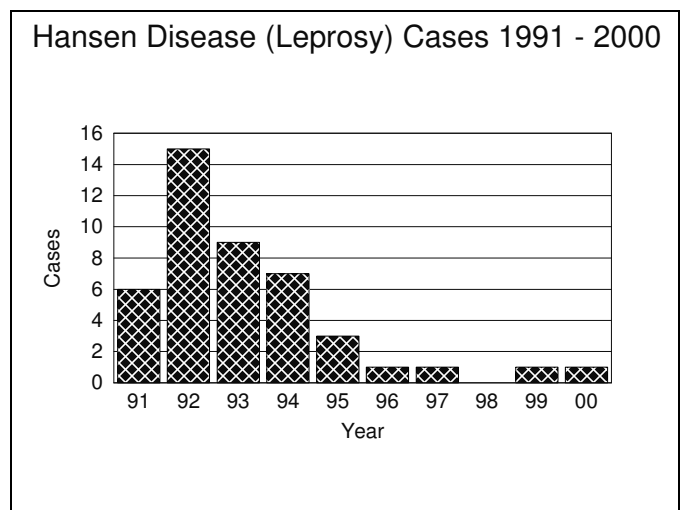
The risk of Legionnaire pneumonia is higher with older age, smoking, chronic diseases, malignancies, or immunocompromise. The incubation period is two to ten days. *Legionella* occur in natural bodies of water, water distribution systems, faucets, showers, and air conditioning cooling towers. In the United States, Legionnaire pneumonia outbreaks have been associated with hospitals, long-term care facilities, construction sites, decorative fountains, hot tubs, and grocery vegetable display water sprays. There is no person-to-person transmission. In 2000, there were 19 cases of legionellosis with one death. Four cases were age 60 or older. An association between potting soil and *L. longbeachae* was investigated recently (MMWR 2000;49:777-8).



Leprosy

Leprosy, or Hansen disease, is a chronic infection with *Mycobacterium leprae* involving the skin and nervous system. The disease is endemic in rural areas of tropical and subtropical regions of the planet. Humans are the only reservoir for the infecting bacterium, with transmission occurring in households and other settings where sustained close contact occurs. Treatment with selected antibiotics eliminates contagiousness and prevents disease progression.

A small number of cases of Hansen disease are diagnosed in Washington each year. These cases represent infections diagnosed among people moving to Washington from areas of the world where the disease is endemic. In 2000, one case of Hansen disease was reported.



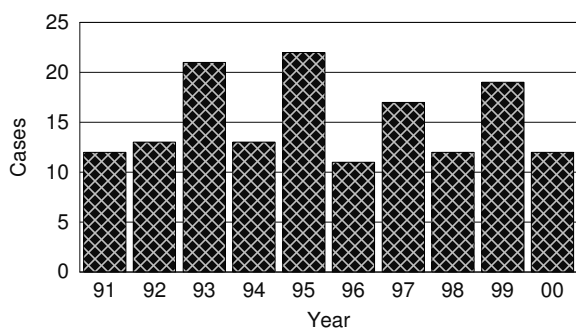
Leprosy is no longer reportable in Washington.

Listeriosis

Listeria monocytogenes infections are rare causes of meningoenzephalitis and sepsis. Newborn infants, pregnant women, the elderly, and immunocompromised people including alcoholics are at highest risk. People with intact immune systems can have only a mild flu-like illness. The disease is particularly severe with high mortality rates in newborn infants, who account for at least a third of cases, and in those with altered immunity.

The bacterium is found in dust, water, animal feed, and feces of mammals and birds. The incubation period is variable, ranging from 3 to 70 days. Humans may carry the organism intestinally without symptoms. Listeriosis outbreaks have been associated with consumption of raw (unpasteurized) milk, cheese made from raw milk, and contaminated meat and produce. Delicatessen foods and uncooked hot dogs may contain *L. monocytogenes*. Persons with altered immune systems should avoid risk products. There were 12 cases and two deaths in 2000. Two cases involved pregnant women with one stillbirth, three cases were newborns, and six cases were age 60 or older.

Listeriosis Cases 1991 - 2000



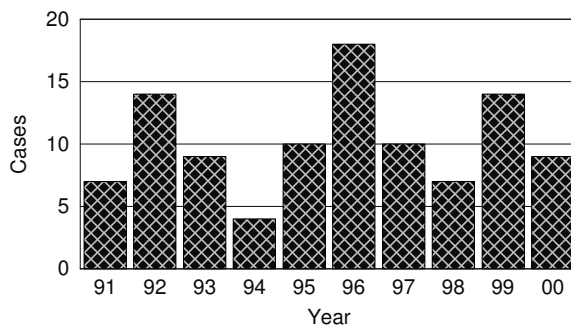
Lyme Disease

Lyme disease is a systemic infection caused by a spirochete, *Borrelia burgdorferi*, transmitted by *Ixodes* spp. ticks. The incubation period is 3 to 32 days. Infections can be asymptomatic. Classic symptoms are a specific expanding red rash (erythema migrans) which can be accompanied by fatigue, fever, headache, stiff neck, and joint pain. Prompt antibiotic treatment of the initial infection can prevent or reduce long-term complications including arthritis, neurologic changes, and cardiac abnormalities.

In diagnosing individual patients, health care providers should use clinical findings supported by two-stage serologic tests. The strict surveillance case definition may exclude atypical Lyme disease cases.

The high number of cases reported in the State in 1989 and 1990 reflects a less stringent case definition, which was in effect at that time. Nine Washington cases were reported in 2000. There were four out of state exposures, three exposed in western Washington, one in central Washington, and the remainder had unknown exposure.

Lyme Disease Cases 1991 - 2000



In 2000 exposures were reported in Clallam, Island, Pierce and Yakima counties.

Lyme Disease cont.

In the United States, Lyme disease is most common along the Atlantic Coast and in the upper midwest. Along the Pacific Coast, cases are more common to the south. Almost all Washington cases are the result of outdoor exposure in counties west of the Cascade Mountains, or in the Cascade foothills, reflecting the distribution of the *Ixodes* tick vector and the deer and rodent reservoirs. Cases tend to occur during warmer months when both ticks and outdoor activities are more common.

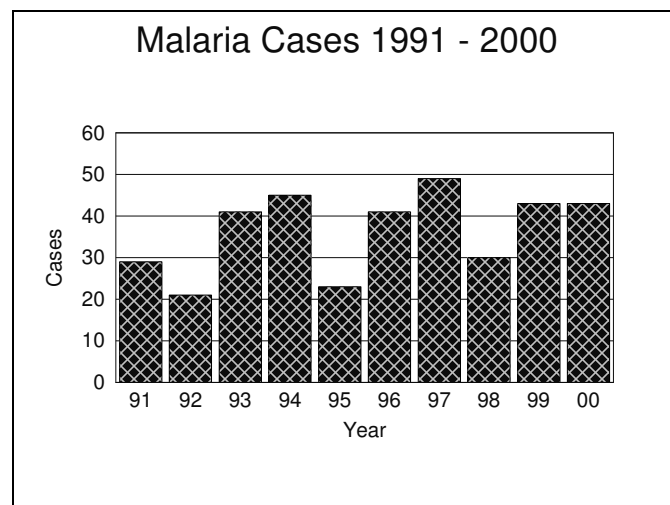
Those hiking or working in areas with ticks, such as heavy brush or grass, should take precautions to reduce the chances of being bitten by a tick: wear light colored clothing so ticks can be seen easily; tuck pant legs into socks or boots and the shirt into pants; if there is heavy tick infestation, adults can spray diethylmeta-toluamide (DEET) on the skin but this insect repellent should not be used on young children because of potential toxicity; and after hiking or working outdoors in tick-infested areas, inspect the body for ticks. Pets can develop Lyme disease and should also be checked for ticks after outdoor exposure in areas likely to be infested with ticks.

A recently available vaccine can be considered for people 15 to 70 years old who live or work in high-risk areas and who have frequent or extended tick exposure. High-risk areas are certain Atlantic and Midwestern states. Washington State is considered a low risk area.

Malaria

The four species of malaria parasites that cause illness in humans are found in the tropics and subtropics where the *Anopheline* mosquito vector occurs. Cyclic fevers, sweats, chills, and headache are typical symptoms of malaria infections, with the incubation period varying by species. Some infections, particularly those caused by *Falciparum* malaria, have life-threatening complications and require prompt treatment. In the absence of the mosquito vector, there is no person-to-person transmission.

Washington has no endemic malaria. The 43 cases reported in 2000 occurred in immigrants and travelers arriving to the state from Africa, Asia, Central America, South America, and Mexico. Prevention and treatment of malaria can be complicated due to increasing levels of resistance to anti-malarial drugs. Updated prophylaxis recommendations for travelers are available from the CDC hotline (404) 332-4555 or on its web page at www.cdc.gov under the Health Information category.

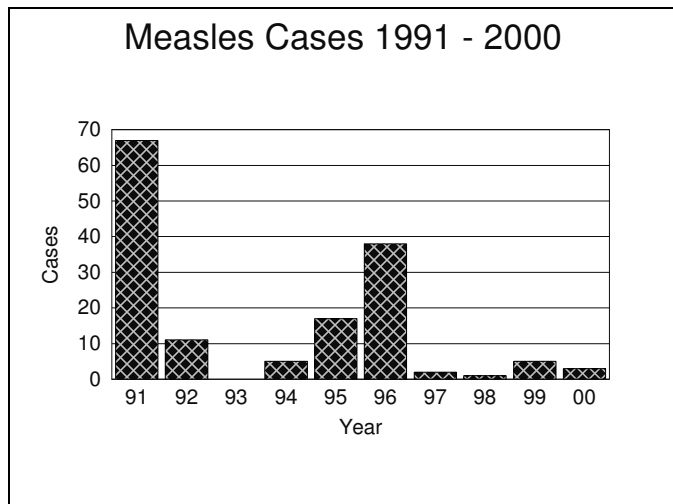


Measles

Measles is an acute viral disease starting with fever, coryza, conjunctivitis, cough, and oral Koplik spots. An erythematous maculopapular rash begins on the face and becomes generalized, lasting a total of 4 to 7 days. Complications of measles, including otitis media, pneumonia, diarrhea, croup and encephalitis, may occur in all age groups. However, measles is most severe in infants and adults.

Diagnosis is made by serologic testing, viral isolation from nasopharyngeal secretions, conjunctiva, blood or urine, or identification of viral antigen in blood or tissues.

In 2000, three cases of measles were reported, two exposed outside of Washington. There were no measles outbreaks in Washington in 2000. During April-June 1996, 31 cases occurred in Clark County associated with an imported case and subsequent transmission; 13 cases were probably acquired within health care settings, including 8 health care workers. None of the 30 secondary cases had full immunization (2 doses MMR).

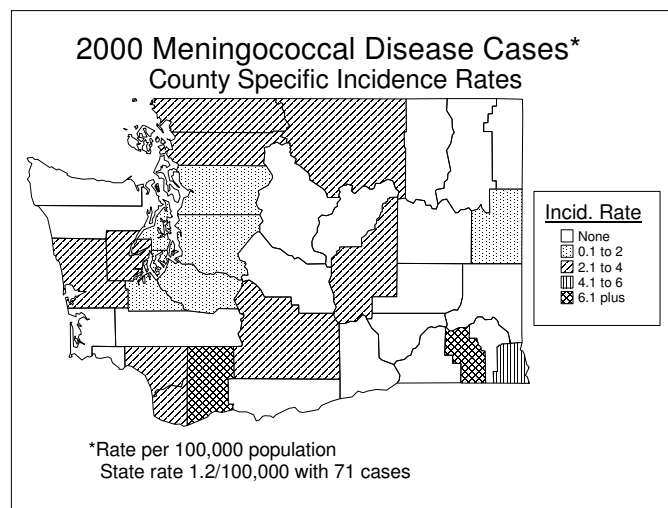


Meningococcal Disease

Severe infections with *Neisseria meningitidis* may occur in the blood (meningococemia) or the cerebral spinal fluid (meningococcal meningitis or encephalitis). Meningococcal disease usually causes a fever, intense headache, and stiff neck. There may be a petechial rash progressing to purpura. About 10% of cases are fatal even if treated.

N. meningitidis is carried in nasal and throat mucosa of humans and spread by secretions. Carriers may have no or mild respiratory symptoms. Close contacts of a confirmed case need antibiotic prophylaxis to prevent infection and to eliminate the carrier state.

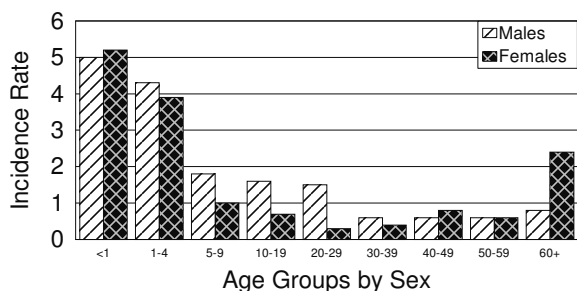
In 2000, there were 71 cases of meningococcal disease for an incidence rate of 1.2 per 100,000 with six deaths. The high rates in Asotin, Columbia and Skamania counties were based on small numbers of cases.



Rates were slightly higher for males than for females. Rates were 5.1/100,000 for children under one year of age (4 cases) and 4.1/100,000 for children 1 to 4 (13 cases).

Meningococcal Cont.

2000 Meningococcal Cases*
Age/Sex Specific Incidence Rates



*Rate per 100,000 population

Race/ethnic groups were based on small case numbers, but Native Americans and Hispanics may be at higher risk.

Capsular polysaccharides designate over 13 serogroups. In the U.S., groups B and C account for 90% of meningococcal disease. Most Washington isolates have been group B. Yakima had a group C outbreak in 1989-1990. Group Y has increased recently and in 2000 accounted for 27% of cases.

Percent Meningococcal Isolates

	B	C	Y	Oth	Unk
1991	60	22	7	8	3
1992	61	21	6	6	7
1993	69	13	3	5	10
1994	52	18	9	4	17
1995	60	13	6	5	16
1996	57	24	14	0	5
1997	51	17	18	4	10
1998	56	18	16	1	9
1999	47	12	27	2	12
2000	42	3	27	4	14

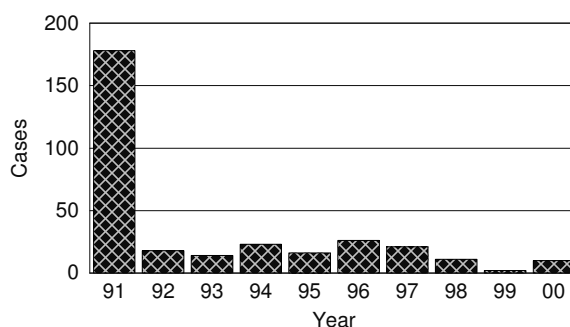
The serogroup B ET-5 clone recognized in Europe two decades ago is associated with hyperendemic meningococcal infection, more severe illness, and higher mortality. In 1993, ET-5 isolates were identified from Oregon and Washington and may explain elevated disease rates in some southwestern Washington counties (JAMA 1999; 281:1493-1497).

Mumps

Mumps is an acute viral disease characterized by fever and swelling of the salivary (typically parotid) glands. Complications include orchitis in post-puberty males and oophoritis in post-puberty females. Other rare complications include sterility, arthritis, renal involvement, thyroiditis, and hearing impairment. Diagnosis is made by isolating the mumps virus in tissue culture inoculated with throat washings, urine, or spinal fluid, or by serologic testing.

In 2000, 10 cases of mumps were reported for an incidence rate of 0.02 per 100,000 population. There were two cases reported in 1999.

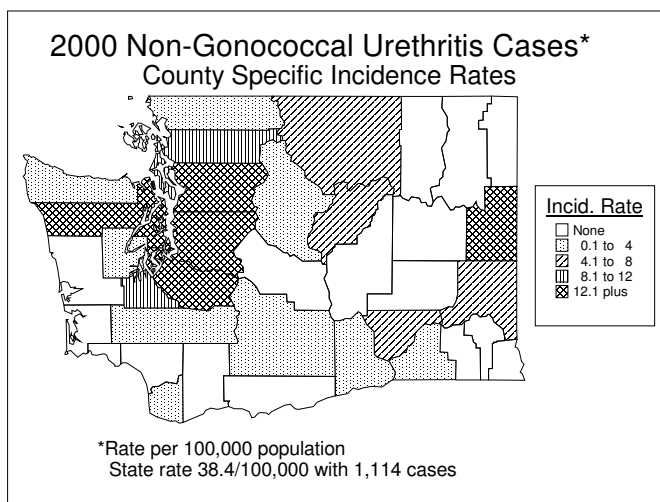
Mumps Cases 1991 - 2000



Non-Gonococcal Urethritis (NGU)

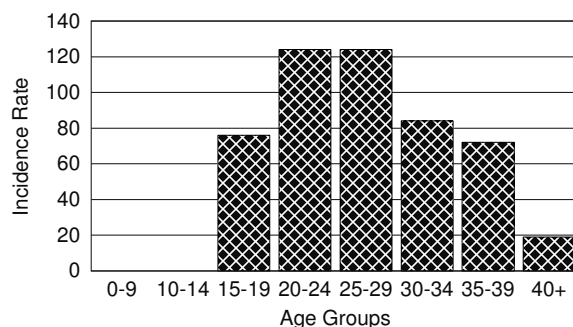
Non-gonococcal urethritis (NGU) is an infection in men, which can be caused by several different organisms. This syndrome is documented by the presence of any of the following signs: mucopurulent or purulent discharge; gram stain demonstrating >5 WBCs per oil immersion field; positive leukocyte esterase test on first void urine or microscopic exam of first void urine showing >10 WBCs per high power field. The gram stain is the preferred rapid test. All patients should be tested for gonorrhea and chlamydia. Patients with positive lab test(s) for gonorrhea and/or chlamydia are not counted in NGU totals. Antibiotic treatment is available for NGU. Untreated NGU can lead to long-term problems, including sterility and epididymitis.

There were 1,114 cases reported in 2000 for an incidence rate of 38/100,000 males compared to 1,051 cases in 1999 (43/100,000). King (73%) and Pierce (12%) counties accounted for 85% of the State's morbidity.



High case rates occurred among men in their twenties and thirties with the highest rate among the 20-24 year old age group (124/100,000).

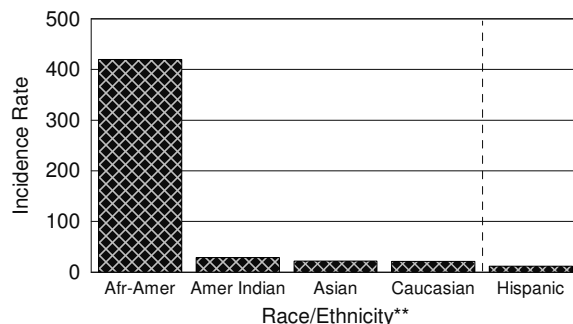
2000 Non-Gonococcal Urethritis (NGU) Cases*
Male Age Specific Incidence Rates



*Rate per 100,000 population
3 cases with unknown age

Of those cases reporting race/ethnicity, African-Americans had the highest race-specific incidence rate (420/100,000). Other groups had rates less than 100/100,000.

2000 Non-Gonococcal Urethritis (NGU) Cases*
Male Race/Ethnic Specific Incidence Rates



*Rate per 100,000 population; 7% with unknown race, 27% with unknown ethnicity
**Race and ethnicity counted separately, e.g. a case can be both "Caucasian" and "Hispanic."

The majority (98%) of NGU was reported by public health care providers, thus a comprehensive summary of NGU infection is not available.

NGU was dropped as a legally notifiable condition in 2000 and is summarized here for the last time.

Pertussis

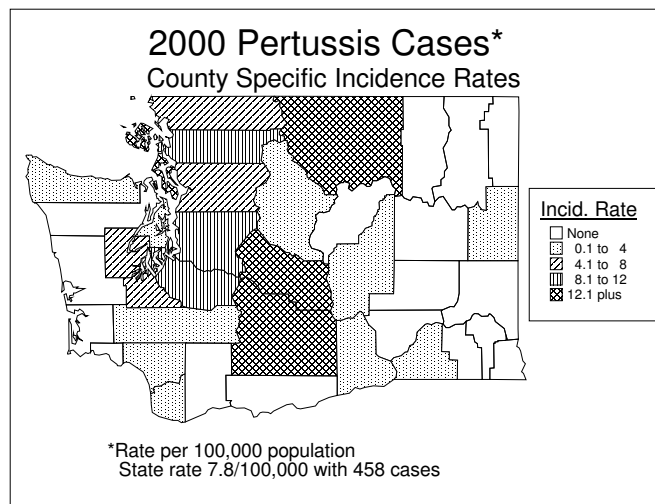
Pertussis is an acute bacterial disease characterized by a severe paroxysmal cough which is violent and repetitive and may be followed by a characteristic high pitched whoop, vomiting, or mucus expulsion or apnea and cyanosis. Illness can last for 1-2 months. Young infants, partially immunized children, or adults may have atypical or less severe symptoms.

Complications include pneumonia (causing most associated deaths), hypoxia (leading to seizures or encephalopathy), dehydration, and otitis media. Infants, especially those under 6 months, are at greatest risk of complications.

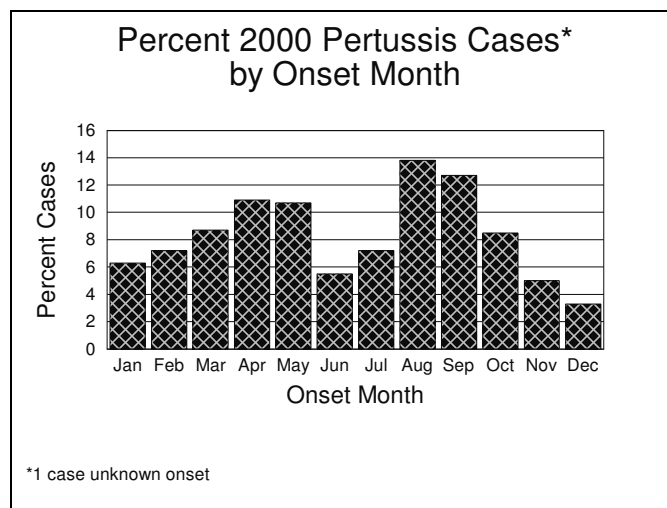
CDC surveillance case definition is based upon identification of *Bordetella pertussis* from nasopharyngeal swab specimens by culture or PCR along with a compatible clinical culture. Direct fluorescent antibody technique or serologic tests may be of use in clinical diagnosis.

In 2000, 458 pertussis cases were reported, for an incidence rate of 7.8/100,000 population. There was one pertussis-associated death in 2000, 1998 and 1996, all infants.

San Juan County had the highest incidence rate of pertussis with 135/100,000 (19 cases) followed by Okanogan County (30.3/100,000).

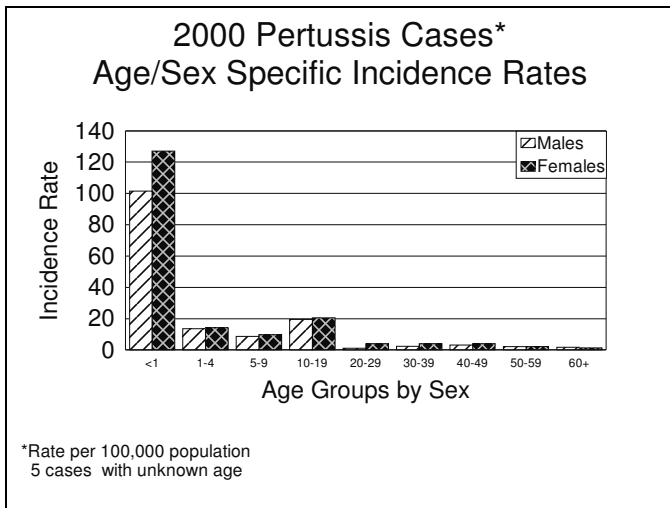


There were two peaks in spring and late summer.

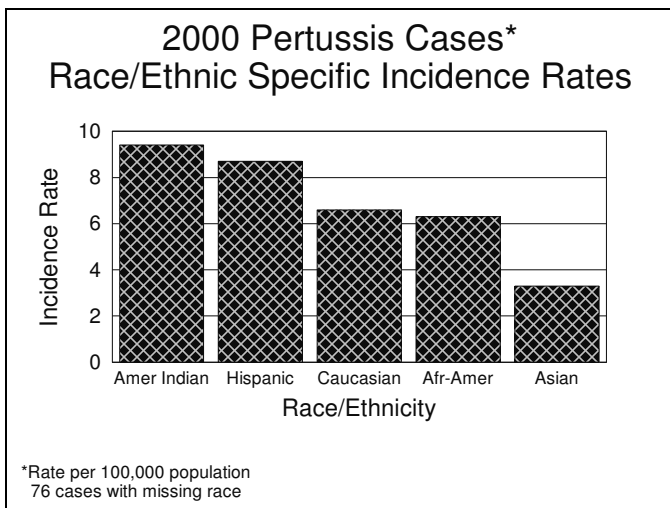


Incidence rate for females was 8.2/100,000 and for males 7.8/100,000. Age-specific incidence rates were highest in those less than one year old (114.0/100,000). Adult caregivers with atypical pertussis may infect young children.

Pertussis cont.



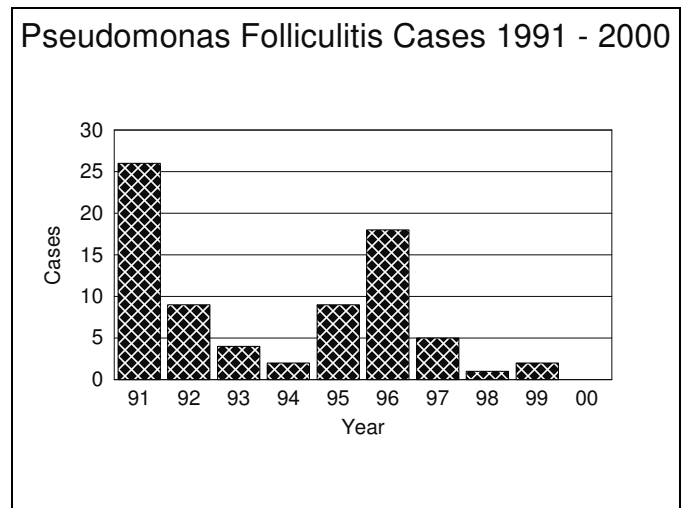
For those with racial/ethnic information, Asians had a lower rate (3.3/100,000).



Pseudomonas Folliculitis

Pseudomonas folliculitis occurs when *Pseudomonas aeruginosa* infects the body follicles, typically after submersion in water. The resulting itching rashes may be on all parts of the body that have been in the water, or may be limited to the area covered by the bathing suit.

Pseudomonas folliculitis outbreaks have been associated with exposures in hot tubs, spas, saunas, whirlpools, and hospital physiotherapy pools. The infections usually clear rapidly with local skin care. Antibiotics may be needed to treat severe skin infections, particularly in people who are immunocompromised. There were no cases reported in 2000. In 1996 an outbreak associated with a crowded hotel hot tub resulted in 18 cases of *Pseudomonas folliculitis*.



Pseudomonas folliculitis is no longer reportable in Washington except as a waterborne outbreak.

Rabies

Rabies is an invariably fatal viral disease of mammals which can be transmitted to humans. Rabies is rare in developed countries only because of animal vaccination, and to a lesser extent prophylaxis of exposed person. A rhabdovirus of the genus *Lyssa* causes rabies. Nucleocapsid and surface protein patterns differ according to the animal species and the geographic location of the animal involved.

Animal Rabies

From 1930-2000, Washington State had a total of 1,944 cases of animal rabies. From 1990-2000 there have been 190 cases of animal rabies, 188 in bats.

Reported Rabies Cases in Washington State 1930-2000

SPECIES	1930-49	1950-69	1970-89	1990-99	2000	TOTAL
BAT	0	76	171	165	23	435
CAT	19	2	1	0	0	22
CATTLE	37	0	0	0	0	37
COYOTE	1	0	0	0	0	1
DOG	1,415	+ 24	1	0	0	1,440
GOAT	2	0	0	0	0	2
HORSE	0	0	0	1	0	1
LLAMA	0	0	0	1	0	1
SHEEP	1	0	0	0	0	1
SKUNK	0	& 2	& 2	0	0	4
TOTAL	1,475	104	175	167	23	1,944

+ Dog from California; & Imported or improperly vaccinated

Some animals are more likely to be infected with rabies virus than others, for example, skunks, foxes, raccoons, and bats. Other wild animals, such as bobcats, groundhogs, woodchucks, and coyotes, have been reported rabid in increasing numbers in south Texas and the northeastern United States due to rabies epidemics.

Human Rabies

Rabies can be transmitted to humans from virus-laden animal saliva by a bite, scratch, or rarely a fresh break in the skin (Appendix V). Transplanted corneas from patients with fatal undiagnosed central nervous system (CNS) disease have caused rabies in recipients.

Rabies has been transmitted rarely by aerosol in bat infested caves or in laboratories.

Human rabies is an acute encephalomyelitis almost always progressing to coma or death within 10 days of onset. Symptoms of headache, fever, malaise, and a sense of apprehension are followed by paralysis (respiratory failure), muscle spasms when attempting to swallow (which may lead to hydrophobia), delirium, and convulsions. Death is most often due to respiratory failure.

The incubation period is usually 2 to 8 weeks, but there have been documented cases of incubation of more than a year after exposure depending on the severity, site, and degree of contamination of the bite. It is thought the closer to nerve sites and the brain, the shorter the incubation period.

The most frequent method to detect rabies is direct fluorescent testing on a specimen of brain or of nerves in a nape of neck biopsy. Confirmatory isolation of virus should be done from saliva, cerebrospinal fluid (CSF), or CNS tissue. A rabies - neutralizing antibody titer > 1:5 in the serum or CSF of an unvaccinated person is indicative of rabies.

There have been two cases of human rabies in Washington State since 1939. In 1995, a death occurred in a child with no history of a bat bite; a bat found in her room tested positive (MMWR 1995;44:625-7). In 1997 a death occurred in an adult with onset of illness in December 1996. There was no history of a bat bite. Preliminary diagnoses included CJD. On death, brain tissue was examined and rabies diagnosed (MMWR 1997:46:771-2).

Rabies Cont.Historical Rabies

Widespread rabies outbreaks occurred in dogs in King County during 1937 to 1940. In response, a major effort was made by public health and veterinary officials to eradicate rabies in domestic animals. By the 1950s, rabies was essentially non-existent in domestic animals.

Since 1970, 13,260 Washington State animals have been tested for rabies with 365 (2.6%) of the animals being positive (Appendix II). Since the 1960s, the major concern in the Northwest has been rabies in bats. Of 5,172 bats examined from 1960 to 2000, 435 (8.4%) were rabid. Rabid bats have been found in almost every county in Washington State.

The last rabid cat was in 1976. In 1987 the last suspect rabid dog, an animal from Pierce County ill six months after exposure to a rabid bat, was positive at the DOH, but was not confirmed by CDC. In 1992, a horse from Benton County was positive for rabies. In 1994, a llama from King County was identified with a strain of bat rabies. Although common in some parts of the United States, raccoon rabies has never been found in Washington. Four skunks positive in the 1960s and 1970s were either imported or inappropriately given rabies vaccine. Rodents and lagomorphs, such as beaver, guinea pigs, gophers, rats, squirrels, rabbits, and hares, have never been positive in Washington. Rabies has not been found in other wild terrestrial animals in Washington for at least the past 60 years.

Rare Conditions

Wild polio was eliminated from the western hemisphere in 1991. The last case identified in Washington was in 1977. Vaccine associated cases have occurred sporadically. The 1997 change in recommendations for inactive rather than oral polio vaccine is expected to eliminate these cases.

Since 1979 only toxigenic diphtheria (noncutaneous) cases are reportable in Washington. A case was reported in 1985.

Diseases of suspected bioterrorism origin are reportable. These include diseases not occurring in Washington such as anthrax, hemorrhagic fevers, and smallpox, as well as uncommon diseases discussed in this report such as botulism, brucellosis, plague, and tularemia.

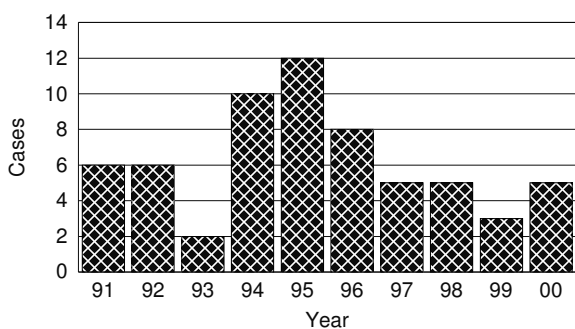
Relapsing Fever

Relapsing fever is a febrile illness caused by *Borrelia* species. In Washington these spirochetes are carried by soft ticks which become infected after biting infected rodents. The ticks feed at night and the bite may be painless. Soft ticks can survive years between blood meals and may be difficult to eradicate from older wooden buildings such as cabins.

After an incubation period of about seven days, the infected person develops febrile attacks with fevers as high as 105°F, chills, headache, body ache, cough, and sometimes a rash. Relapsing fever is treated with antibiotics and is not transmitted person-to-person but may be transmitted during pregnancy.

There were five relapsing fever cases in 2000, all exposed in eastern Washington or Idaho. All exposures in the State have been in eastern counties. A minority of cases specifically recall a tick bite.

Relapsing Fever Cases 1991 - 2000



Rubella

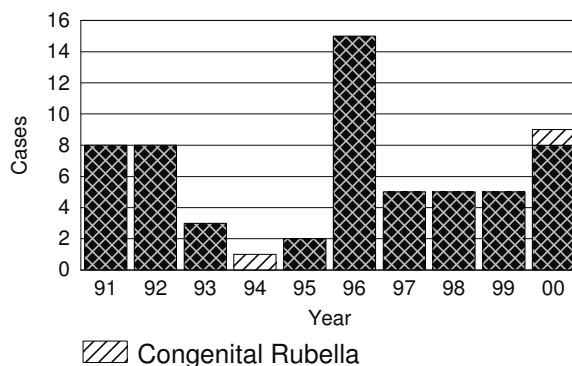
Rubella (German Measles) is a viral disease of children in unvaccinated populations, and adolescents or young adults in vaccinated populations. Rubella is endemic except for remote areas. Epidemics have occurred in the United States, in 1935, 1943, and 1964.

Rubella causes a rash accompanied by slight fever and lymphadenopathy. Children can have minimal symptoms. Adults may have extended illness, but other than chronic arthritis few complications are reported. Congenital rubella syndrome due to first trimester exposure causes abnormalities of the brain, eye, ear, and internal organs.

Diagnostic tests for rubella include antibody titers, virus isolation, or identification of viral antigen in blood or tissues. Congenital infection is confirmed by antibody titers.

In 2000, eight cases of rubella were reported. All eight were part of an outbreak in Grays Harbor introduced from Central America. One congenital rubella case also occurred from out of state exposure.

Rubella Cases 1991 - 2000



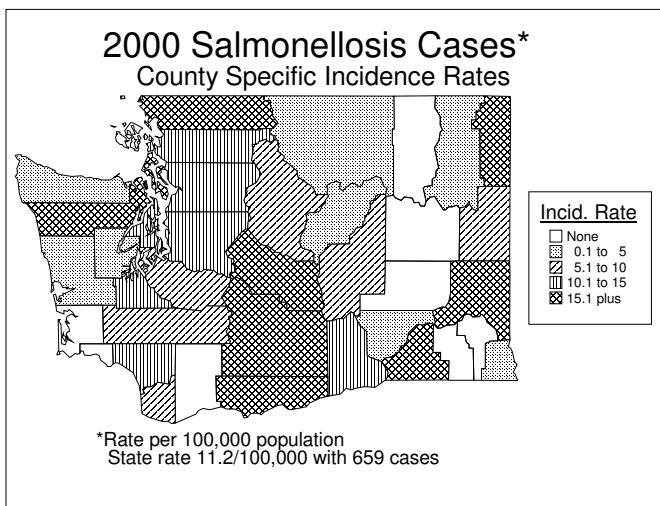
Salmonella

Salmonella are bacteria which may cause illness in humans and animals. The disease in humans is characterized by sudden onset of headache, fever, diarrhea, nausea, abdominal pain, and sometimes vomiting, with illness lasting several days. Dehydration can be severe, particularly in children. The incubation period is 6-72 hours, generally 12-36 hours. Communicability lasts several days to weeks. Animals (especially reptiles, chickens, cattle, dogs, and cats) can carry *Salmonella* chronically and be a source of human infection.

In 2000, there were 659 salmonellosis cases reported in Washington for an incidence rate of 11.2 per 100,000 population. High rates were reported in Yakima, Whitman, and Island counties.

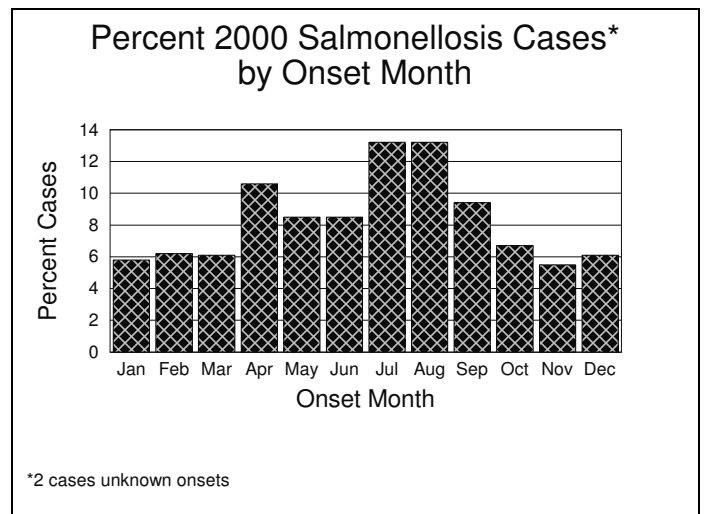
Table 1. 2000 Salmonellosis Cases by Serotype

Serotype	Number	Percent
Typhimurium	207	31
Enteritidis	101	15
Heidelberg	39	6
Unknown	35	5
SaintPaul	24	4
Newport	23	4
Paratyphi B	20	3
Montevideo	19	3
Infantis	17	3
Agona, Braenderup, Poona	16	each 2 each
Oranienburg	14	2
Thompson	12	2
Virchow	8	1
Muenchen	7	1
B:i:-, Stanley,	5	each <1 each
9,12:1,Z28:----. Anatum, Hadar	4	each <1 each
50:K:Z, Dublin, Litchfield, Mbandaka,		
Rubislaw, Sandiego	3	each <1 each
Daytona, Give, Javiana, Paratyphi A		
Senftenberg, Uganda Urbana,	2	each <1 each
41:Z4 Z23:-, 48:Z4:Z24, 1	each <1	each
Agoueve, Alachua, Albany, Blockley, Brandenburg, Canada, Cerro, Clarkamas, Cubana, Derby, Grumpensis, Havana, Istanbul, Itami, Kentucky, Lome, Lomita, Marina, Meleagridis, Miami, Minnesota, Muenster, Panama, Pomona, Reading, Schwarzengrun, Tennessee, Wein, Weltevreden, unknown serotype.		
Total	659	100%



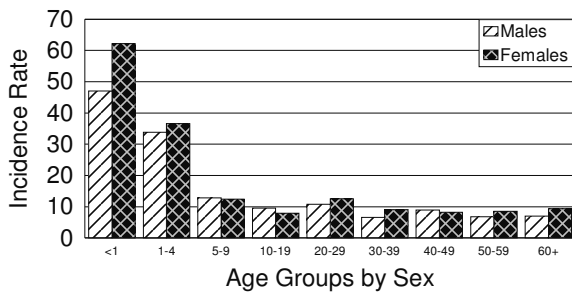
All *Salmonella* isolates are required to be sent to the DOH for serotyping. This aids in identifying outbreaks and sources of infection. *S. Typhimurium* and *S. Enteritidis* remain the most common serotypes found. Thirty-one serotypes had one case each.

Salmonella infections occur year round but usually peak during the summer and early fall.



Salmonella Cont.

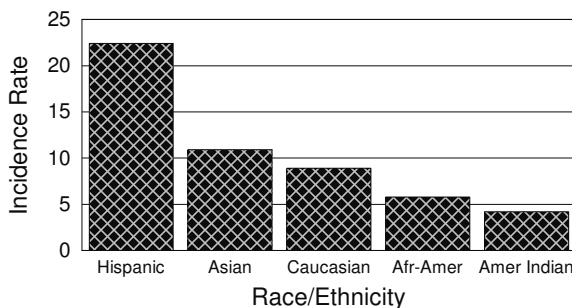
2000 Salmonellosis Cases*
Age/Sex Specific Incidence Rates



*Rate per 100,000 population
1 case with unknown sex
4 cases with unknown age

Of cases with information on racial/ethnic groups, Hispanics had the highest rate (22.4/100,000).

2000 Salmonellosis Cases*
Race/Ethnic Specific Incidence Rates



*Rate per 100,000 population
99 cases with missing race

Common food exposures with salmonellosis are eggs, raw milk, poultry, meat, and some produce. Reported cases in 2000 included 14 foodhandlers. Infected foodhandlers must not work if ill with diarrhea; two stool cultures negative for *Salmonella* are needed before resuming work. Reptiles (MMWR 1999; 48:1009-13), African pygmy hedgehogs (MMWR 1995;44:462-3), and other exotic animals may carry *Salmonella*. After handling such animals always wash hands thoroughly and don't expose infants to the animals or their droppings.

Shigellosis

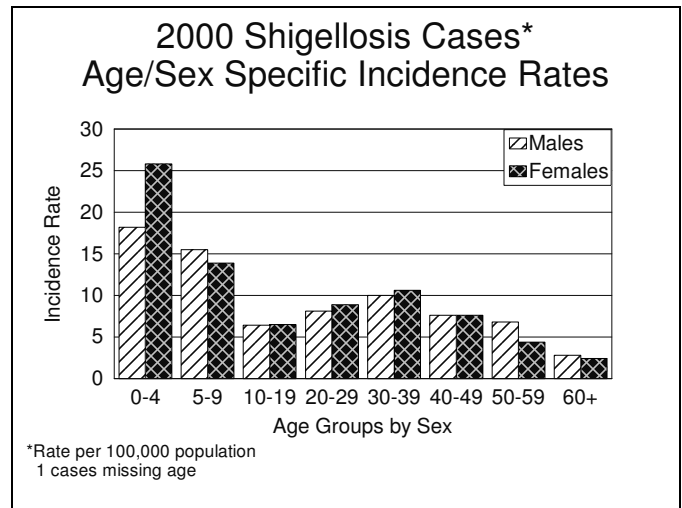
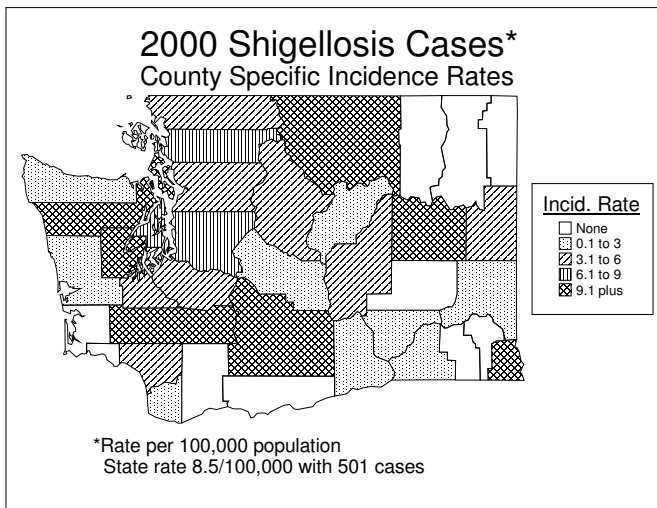
Shigellosis is an acute bacterial disease of the colon and distal small intestine. *Shigella* has four species or sub-genera: Group A, *S. dysenteriae*; Group B, *S. flexneri*; Group C, *S. boydii*; and Group D, *S. sonnei*. Groups A, B, and C are further subdivided into about 40 serotypes, designated by Arabic numerals.

The typical invasive infection illness is characterized by dysentery - frequent small bowel movements accompanied by blood, mucus, and pus - with high fever and malaise, headache, and abdominal pain. Enterotoxin may cause watery diarrhea with vomiting. Illness may last several days to weeks, averaging 4-7 days. Young children may have serious complications. Bacteremia or disseminated infection are rare. Mild or asymptomatic infections occur but carrier states are uncommon. Humans are the major reservoir of *Shigella*. Fecal - oral transmission may be person-to-person, or involve contaminated food and beverages.

In 2000, 501 cases of shigellosis were reported for a statewide incidence rate of 8.5 cases per 100,000 population. A large interstate *Shigella sonnei* outbreak associated with a commercially produced food (MMWR 2000;49:60-1) included 132 cultured confirmed cases in Washington.

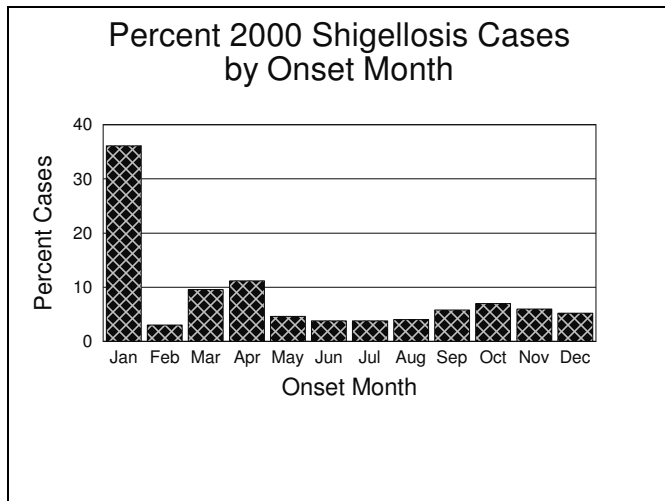
Yakima County had the highest county-specific incidence rate of shigellosis with 70.3/100,000 (157 cases).

Shigellosis cont.



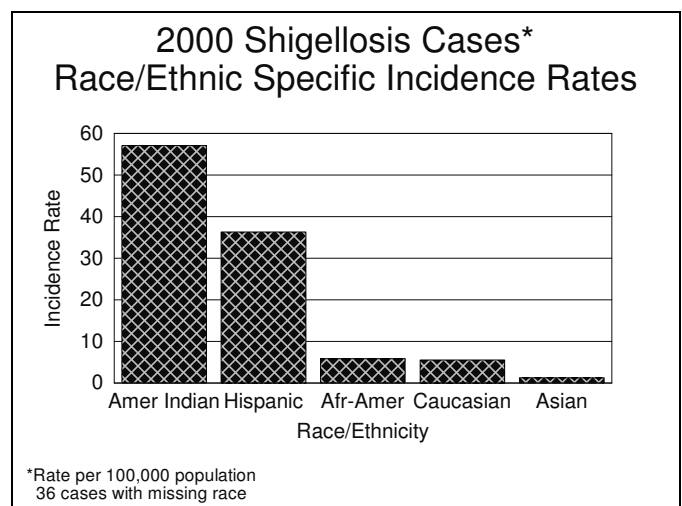
Eleven percent of the cases were reported as attending a day care, and 13% had household day care contact. Shigellosis was found in eight food handlers. The January peak is due to the large foodborne outbreak.

Shigella sonnei (402, 80%) was the most common serotype identified, followed by *S. flexneri* (1-6,4) 15% (77 cases), and *S. boydii* (2,4,8,14) (6 cases). There was one *S. dysenteriae* and 15 isolates with unknown serotype.



For the 465 (93.7%) cases for which race and ethnicity were reported, American Indians had the highest incidence rate (57.1/100,000), followed by Hispanics (36.3/100,000).

Age-specific rates of shigellosis were greatest for children 0 through 4 years (21.9/100,000) and the 5 - 9 age group (14.7/100,000).



Syphilis

Syphilis is caused by a corkscrew-shaped bacterium called *Treponema pallidum*, one of a small group of treponemes in the order Spirochaetales, which are virulent for humans.

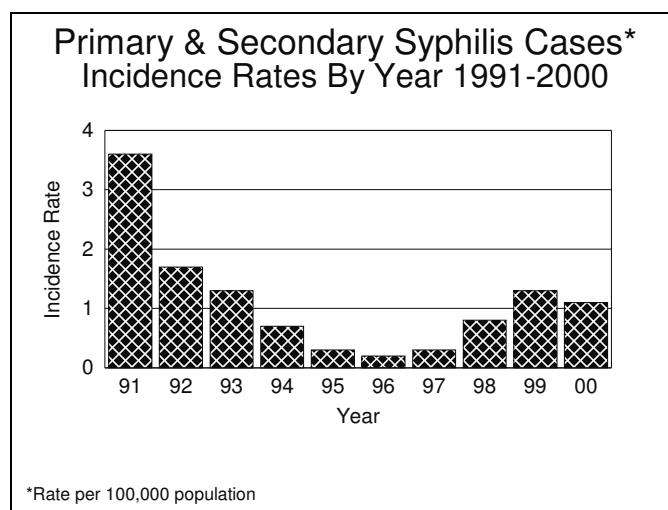
Infection is acquired by direct contact with the sores of active syphilis. The disease course is divided into four stages - primary, secondary, early latent, and late/late latent. Untreated syphilis is infectious during the first three stages. In its noncontagious late stage, possibly occurring 2-25 years after the primary stage, untreated syphilis may cause complications such as central nervous system impairment and damage to the heart or other organs. Syphilis is strongly associated with human immunodeficiency virus (HIV) infection. Syphilis increases the risk for acquiring HIV and facilitates its transmission.

Syphilis has been called the "great imitator" because many of its signs and symptoms are indistinguishable from other diseases. Signs and symptoms differ for each stage. During the primary stage the most common sign is a painless ulcer, or chancre, appearing after about 3 weeks at the site of infection (mouth, genitals, anus). A chancre heals within a few weeks even untreated. Secondary syphilis, occurring 3-6 weeks after the chancre first appears, may involve a fever, rash on the palms or soles, aching muscles, headache, hair loss, and fatigue. Both stages resolve spontaneously. Each observable stage is followed by a period of latency without signs or symptoms. Fetal death occurs in approximately 40% of cases of untreated syphilis during pregnancy. Surviving infants may be born with congenital syphilis and suffer blindness, brain damage, and serious bone deformities.

Blood tests can diagnose syphilis. In the early stage, *T. pallidum* can be isolated from the chancre. Syphilis is usually treated with

injectable penicillin. In all stages, proper treatment will cure the disease, but damage done to body organs in late syphilis cannot be reversed.

The last major syphilis outbreak in Washington State occurred in 1989 and 1990. In 2000, there were 66 primary and secondary (P&S) infections (incidence rate 1.1/100,000)*, 20 early latent cases (0.3/100,000), 85 late/late latent cases, and one congenital syphilis case. Rates for county, age, and race are not good barometers of syphilis due to small numbers.



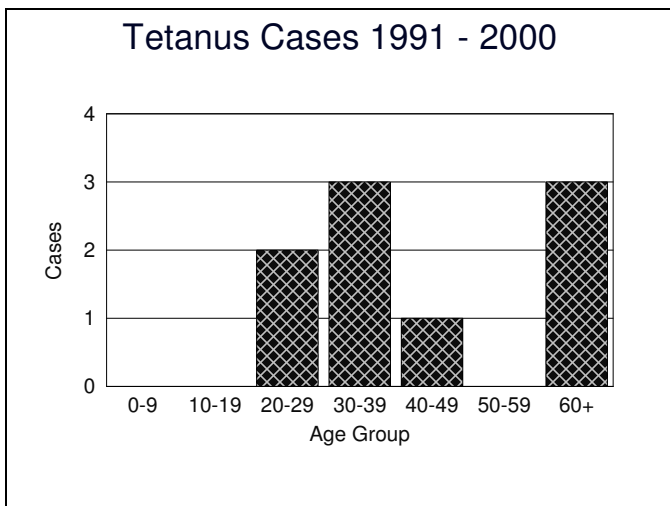
*King County cases represented 76% of the 66 primary and secondary stage syphilis reported in 2000. Many of the other cases in the state spread from this outbreak which is almost exclusively among men having sex with men. Two-thirds of the cases were HIV infected and most were in care for HIV at the time of their syphilis infection. Because of this, routine STD screening in primary care settings is recommended.

Tetanus

Tetanus, also known as lockjaw, results from a neurotoxin produced by *Clostridium tetani*. Bacteria can be introduced into the body when a wound is contaminated with dirt or feces, such as when gardening or working on a farm. Injection drug users are also at risk.

The toxin causes painful contractions of head and neck muscles, and may cause respiratory failure. Mortality from tetanus is high even with supportive care. Tetanus is entirely preventable with immunization. After an initial childhood tetanus series, adults should receive a tetanus booster every ten years, and may need an additional dose after a dirty or penetrating wound.

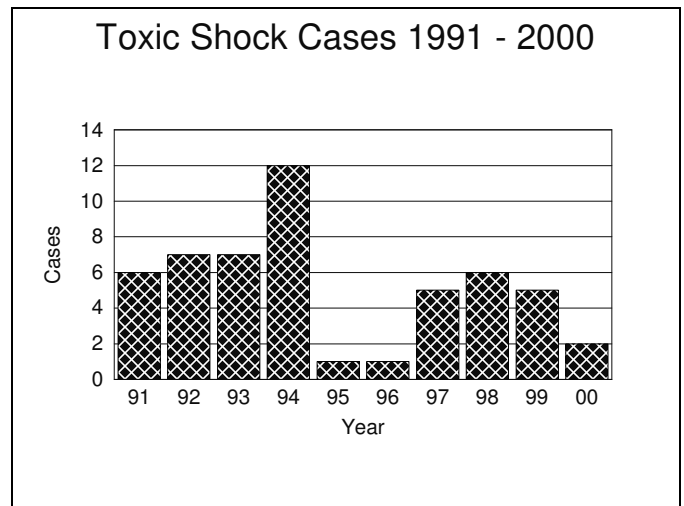
About half of the cases in developing countries are neonatal tetanus. In this country tetanus typically occurs in adults over 60 years of age, reflecting absent or incomplete immunization. One tetanus case was reported in 2000.



Toxic Shock Syndrome

In 1980, an outbreak of severe illness associated with a new brand of vaginal tampons resulted in the identification of the toxic shock syndrome (TSS). Certain strains of *Staphylococcus aureus* produce toxins that cause high fever, a peeling sunburn-like rash, hypotension, and shock. Watery diarrhea and muscle aches usually occur.

Although associated with tampon use, TSS can also follow *S. aureus* infections of wounds. Increased reports in 1986 and 1987 may reflect active surveillance for TSS during that time. There were two TSS cases in 2000, with one death.



Intermittent use of tampons and use of less absorbent tampons may reduce the risk of developing TSS.

Toxic shock syndrome is no longer reportable in Washington.

Travel Associated Infections

Travel elsewhere in the United States results in rare exposures to infectious diseases not usually found in Washington. Although not reportable diseases, reports have been received of infections such as coccidioidomycosis, Colorado tick fever, histoplasmosis, and leishmaniasis, which are unlikely to be contracted in Washington.

International travelers can be exposed to infections such as diarrheal diseases, malaria, and tuberculosis, or can experience a number of unusual infectious disease exposures. Particularly common are travel associated gastrointestinal infections. Arthropods such as mosquitoes and ticks can transmit a number of infectious diseases. Sexually transmitted diseases may also be acquired during travel.

Several reportable communicable diseases are frequently or entirely due to exposures occurring outside the United States. These include brucellosis, cholera, dengue fever, hepatitis E, malaria, typhoid, and typhus. Those diseases not discussed elsewhere in this report are summarized below. Other infectious diseases, such as salmonellosis, shigellosis, hepatitis A, and other intestinal infections, may result from travel or from local exposures. If proper control measures are taken, imported infectious diseases do not present a public health risk to Washington residents.

People planning to travel outside of the United States, Canada, and western Europe should obtain current information from a physician or clinic. Immunizations may require weeks or months to complete, so such consultations should be planned well in advance of traveling. Travel information is also available from CDC (www.cdc.gov).

Unusual travel-associated infections

Cholera

Cholera is rarely diagnosed in Washington. In 1992, two cases were related to travel from Cambodia and one case in 1996 was associated with out of state travel.

Coccidioidomycosis

Coccidioidomycosis is a respiratory infection due to the fungus *Coccidioides immitis*, found in dusty soil in the southwestern United States and northern Mexico. The most common symptoms are fever, cough, chest pain, and muscle aches; some infected people have no symptoms but rare disseminated infection occurs. At least 21 members of a Washington group that did construction work in northern Mexico in 1996 developed coccidioidomycosis.

Cyclosporiasis

Cyclospora causes persisting watery diarrhea with nausea, fatigue and weight loss. A case in 1999 followed travel to Mexico. Cyclosporiasis which can be foodborne, is now reportable in Washington.

Dengue fever

Several mosquito-borne viruses cause dengue fever, a febrile illness with headache, joint pains, gastrointestinal symptoms, and rash. A rare severe hemorrhagic fever occurs with repeated infections. Imported cases of dengue fever were reported in Washington in 1999 (six cases), 1992 (4 cases), and one each in 1995, 1994, and 1991.

Typhus – (Murine)

Flea-borne typhus, a rickettsial disease, causes headache, chills, fever, body aches, and a rash. A 1994 imported case was the second reported in Washington in a decade.

Tuberculosis

Tuberculosis (TB) is a mycobacterial disease usually involving the lungs (in about 80% of cases). The genus *Mycobacterium* contains several species; however the vast majority of tuberculosis in the United States is caused by *M. tuberculosis*.

The mode of transmission is exposure to airborne droplet nuclei from sputum of persons with infectious TB. Close contacts are at the highest risk of being infected. The incubation period is highly variable from individual to individual. Persons with TB infection but no overt symptoms are not infectious. Typical symptoms of pulmonary TB include coughing, chest pain when breathing or coughing, and coughing up blood. General symptoms of pulmonary and extrapulmonary TB include weight loss, fatigue, malaise, fever, and night sweats. Symptoms of extrapulmonary TB disease depend on the affected area. TB infection is detectable by use of the tuberculin skin test; diagnosis of pulmonary disease is by X-ray and by microscopic examination and culturing of sputum samples.

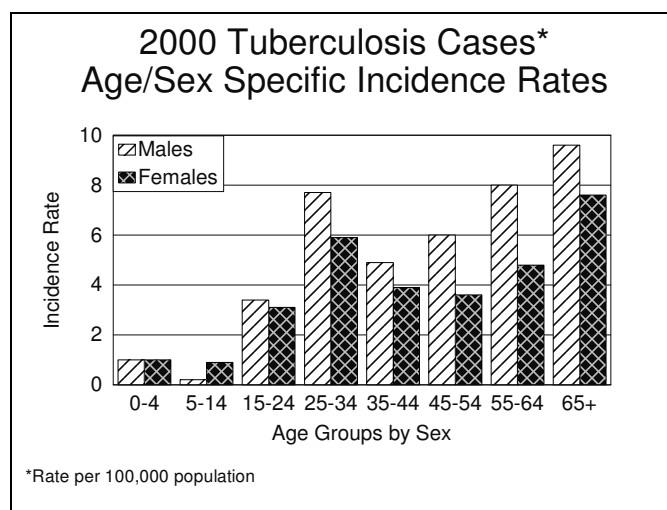
After a decades-long decrease in the number of TB cases reported annually in Washington and in the United States, TB has reemerged as a serious communicable disease. From 1984 through 1991, TB cases increased in Washington by nearly 50% - from 207 to 309. Factors contributing to an increase in TB in the United States include immigration from countries where TB is common, the association of TB with the HIV epidemic, and transmission of TB in congregate settings (correctional facilities, health care facilities, homeless shelters). From 1991 to 1995, TB cases decreased by 10% to 278 cases. There was then another increase in both 1996 and 1997. Since 1997, TB has decreased or remained static.

In 2000, 258 cases of tuberculosis were reported, for a statewide incidence rate of 4.4 cases per 100,000 population, the lowest TB incidence on record.

Cases were reported from 25 counties. Franklin and King counties had the highest incidence rates of tuberculosis with 13.2 and 7.5/100,000, respectively.

No temporal or seasonal trends in TB case reporting have been noted.

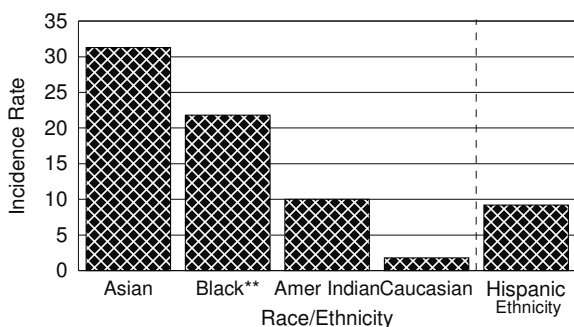
Age specific rates of tuberculosis were highest in 65+ age group with 8.5/100,000. For the youngest ages (0-4 years) the incidence rate dropped from 2.3 per 100,000 in 1999 to 1.0 per 100,000 in 2000.



For the 258 cases reported in 2000, Asians had the highest incidence rate (31.3/100,000), followed by Blacks (21.8/100,000), American Indians (10.0/100,000), Hispanics (9.2/100,000) and Caucasians at 1.8/100,000.

Tuberculosis cont.

2000 Tuberculosis Cases*
Race/Ethnic Specific Incidence Rates



*Rate per 100,000 population
**Since 65% of the Black cases are foreign-born they are not classified as African American. Persons of Hispanic ethnicity may be of any race.

Foreign-born cases accounted for 180 (70%) of total cases.

Race/Ethnicity and Origin of TB Cases

Race/Ethnicity	U.S. Born	%	Foreign Born	%
White, Non Hisp	49	77	15	23
Black, Non Hisp	15	35	28	65
Hispanic	2	6	3194	
Amer Indian/ Alaska Native	10	100		0
Asian/Pac Isl.	2	2	106	98
Unknown				
Total	78	30	180	70

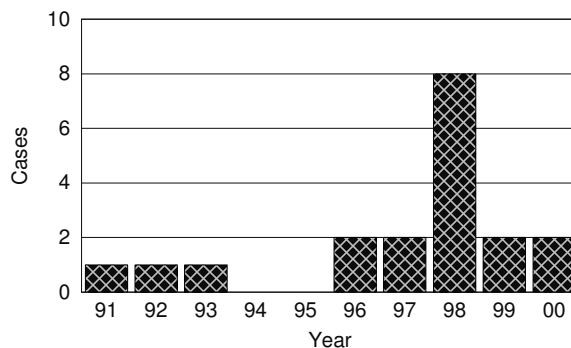
Dually diagnosed cases of TB/AIDS moved from 6 (2.0%) in 1999 to 9 (4.0%) in 2000. Five of these dual TB/AIDS cases were born in the United States.

Resistance to at least one anti-TB drug was found in 40 of 228 culture-positive cases (18%) tested for drug susceptibility. Of the 40, 8 (20%) were from the United States and 32 (80%) were foreign-born cases. There were 4 multiple-drug resistant cases (defined as resistance to at least INH and rifampin) in 2000.

Tularemia

Tularemia, also known as rabbit fever or deerfly fever, is a bacterial infection with a variety of clinical forms. Depending on the route of entry and the particular tularemia strain, the disease can cause skin ulcers, swelling of the lymph nodes, sore throat, abdominal pain with diarrhea and vomiting, conjunctivitis, pneumonia, or a systemic infection with fever, chills, headache, and watery diarrhea. Although most tularemia infections are not serious, pneumonia and systemic illness can be fatal in the absence of antibiotic treatment. In 2000, there were two tularemia cases in Washington. Exposures in Washington have included farming and rabbit skinning.

Tularemia Cases 1991 - 2000



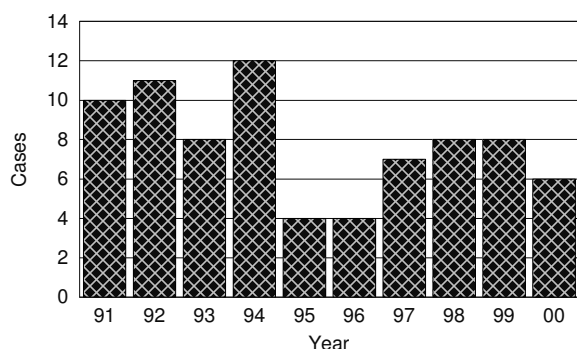
Many wild animals including rabbits, hares, voles, beavers, and muskrats can be infected with the organism *Francisella tularensis*. Transmission occurs with exposure to infected animal material (skins, blood, meat) or with the bite of an infected tick or insect. Contaminated meat, water, soil, or pelts can transmit the infection.

Typhoid Fever

Typhoid fever, caused by *Salmonella typhi*, is a systemic infection with fever, headache, rash, constipation or diarrhea, and swelling of the lymph nodes. Blood, urine, or stool may contain bacteria. The disease is spread fecally by person-to-person transmission or through contaminated food, water, and milk. The incubation period is one to three weeks. Mortality may be 10% without antibiotic treatment. Because there can be a prolonged intestinal carrier state, sometimes due to gallbladder infection, patients should be recultured after antibiotic treatment to confirm resolution of the infection.

Typhoid is no longer considered endemic in Washington, with cases generally reported among immigrants and travelers. People traveling to areas where there is a recognized risk of exposure to *S. typhi* should receive immunization. A 1990 foodborne outbreak of typhoid fever was the only Washington typhoid outbreak in the past 15 years. In 2000, there were six typhoid cases due to exposures in Asia, Africa and Mexico; two of the cases were family contacts of a traveler.

Typhoid Fever Cases 1991 - 2000



Vector borne and Zoonotic Infections

Arthropod-Borne Encephalitis

Western equine encephalitis (WEE) is a viral illness transmitted by *Culex* mosquitoes from wild birds and small mammals. There is no person-to-person transmission. Cases can be asymptomatic. Mild cases are characterized by headache and stiff neck. More severe infections have acute onset of stupor, disorientation, coma, tremors, convulsions (especially in infants), spastic paralysis, and death. No cases of WEE have been acquired in Washington since 1982.

Babesiosis

Protozoal *Babesia* species are transmitted by ticks. Infection is characterized by fever, hemolytic anemia and kidney failure. The first locally acquired case was reported in 1991 and was caused by a unique *Babesia* strain designated WA-1. In 1994, transfusion-associated babesiosis was documented in a blood recipient in Washington, and the asymptomatic donor tested positive. The DOH would appreciate notification of cases.

Brucellosis (Undulant fever)

Bacterial *Brucella* species causing brucellosis are carried by cattle, swine, goats, sheep, and dogs. Symptoms are generalized and include fever, chills, headache, and joint pains. Severe involvement of organs, bones, joints, or the genitourinary system can occur. Exposure occurs through contact with animal tissues and body fluids, particularly afterbirth, or by ingesting raw milk or raw milk products. Washington was declared free of bovine brucellosis in 1988. Brucellosis in Washington residents usually results from exposures outside the country. Three travel associated cases were reported in 1998.

Vector borne and Zoonotic Infections cont.**Cryptosporidiosis**

Cryptosporidia are protozoans causing fever, nausea, vomiting, cramps, bloating, and watery diarrhea usually lasting 1 to 14 days, but more severe with AIDS. Exposure is from untreated surface water, livestock, wild animals, pets, and person-to-person such as in day care facilities. Boiling water at least a minute kills the parasite but chemicals (e.g. chlorination) may not. Washington outbreaks have been associated with small commercial water systems and wells (JID 1996;174:1372-6). A 1997 food-associated outbreak occurred in Spokane (MMWR 1998;47:565). Cryptosporidiosis is now reportable in Washington. Of 18 cases from 2000, one followed travel (Mexico) and four were exposed to farm animals.

Ehrlichiosis

Ehrlichiosis, a rickettsial infection caused by various *Ehrlichia* species, takes several forms. Symptoms, including fever, headache, body aches, and nausea, range from mild to severe. Ticks are the presumed vector. Ehrlichiosis has been reported from northeast, southern and midwestern United States and in Washington. The DOH would appreciate notification of ehrlichiosis cases.

Leptospirosis

Various leptospire cause acute fever, chills, headache, eye symptoms, and muscle aches collectively called leptospirosis. Hepatorenal failure, fatal hemorrhage, adult respiratory distress syndrome, or cardiac arrhythmia may occur. Reservoirs include rats, cattle, pigs, dogs, and raccoons. Transmission is through contact with urine or urine-contaminated waste or vegetation. Two cases were reported in 1997, both exposed out of state.

Plague

The only Washington case of human plague since 1907 was a Yakima trapper in 1984. Due to infected rodents, sporadic cases occur in the west. Two coyotes tested positive during 1997-98 animal surveillance.

Psittacosis

Psittacosis (parrot fever, chlamydiosis, or ornithosis,) is due to *Chlamydia psittaci*. Psittacine birds (parrots, parakeets, cockatiels) are the most common reservoir, but infection may occur in other wild, domestic, and pet birds. Birds may be symptomatic, particularly if stressed, but healthy birds also carry the organism. Feces or nasal secretions may remain infective for months.

Incubation is one to four weeks. Symptoms are variable, commonly including fever, rash, aches, chills, and respiratory disease. When pneumonia occurs, chest X-ray findings may be major but symptoms minor. Rare complications of thrombophlebitis, myocarditis, and encephalitis may be fatal. Untreated disease can be severe in the elderly. Diagnosis is by paired sera several weeks apart. The organism can also be identified in sick birds. Antibiotic treatment is available for humans and birds. In 2000, there was one case of psittacosis reported in Washington. (Compendium of Psittacosis (Chlamydiosis) Control, 1997. MMWR July 18, 1997; Vol 46, No. RR-13.)

Q Fever

Infection with the rickettsia *Coxiella burnetii* results in fever, chills, headache, weakness, and sweats. The liver or heart may be affected. Sheep, cattle, goats, cats, birds, and ticks carry the infection. In the United States, exposure is generally occupational. No state cases were reported in 2000.

Vector borne and Zoonotic cont.

Rocky Mountain Spotted Fever (RMSF)

RMSF is a tick-borne rickettsial infection characterized by high fever, chills, headache, muscle pain, and often a rash. In this country it is most common in southern regions, not the Rocky Mountains. Mortality can be 25% without treatment; RMSF can be fatal if treatment is delayed. Most Washington cases occur after travel to other states. Two of the three 1999 Washington cases had exposure in the state; one case was fatal.

Tick Paralysis

An ascending paralysis is caused by certain ticks, which attach to humans or animals and release a neurotoxin. Removing the tick, which often embeds at the nape of the neck or hairline, usually reverses the symptoms. Two cases were reported in 2000.

Trichinellosis

Although not strictly a zoonotic disease, infection with *Trichinella spiralis* can result from eating undercooked game. Encysted larvae survive some preparation methods for wild meat jerky. Wild game should be cooked thoroughly before eating. Some *Trichinella* resist freezing. In 1993 and 1994, bear meat was associated with one trichinellosis case each. In 2000, a case was associated with wild cougar jerky.

Selected Vectorborne/Zoonotic Infections *

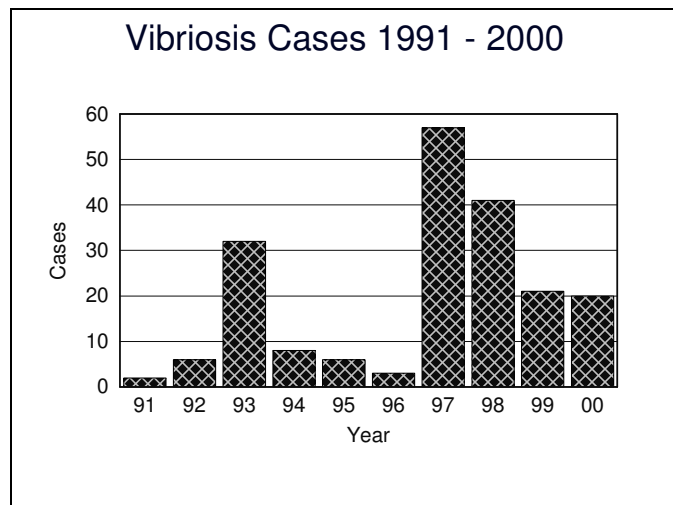
	Case Reports									
	91	92	93	94	95	96	97	98	99	00
Brucellosis	3	1	0	0	1	2	3	3	0	0
Leptospirosis	0	0	0	0	0	2	2	0	0	0
Q Fever	0	0	1	0	1	0	0	0	1	0
RMSF	1	0	0	0	1	1	0	0	3	0
Tick Paralysis	1	0	1	1	1	1	0	0	0	2
Trichinellosis	0	0	1	1	0	0	0	0	0	1

* data for other infections presented in Appendices

Vibriosis

Intestinal illness can occur due to infections with *Vibrio* species, which occur naturally in marine waters. Eating seafood, in particular raw shellfish, is a risk. Cooked food can be contaminated if rinsed with seawater. Failure to keep shellfish cold after harvesting can contribute to bacterial growth. *V. parahaemolyticus* is the most commonly occurring species in Washington. Infections result in cramps and severe watery diarrhea, accompanied by vomiting, headache, and fever.

In 2000, 20 cases were reported in Washington residents. Sixty-two percent consumed shellfish; 43% ate raw oysters.



V. vulnificus, a species that occurs in Gulf states, is associated with eating raw or undercooked shellfish. Severe disease with sepsis and shock can occur in persons with immunosuppression, cancer, chronic liver disease including chronic alcoholism, chronic kidney disease, or chronic intestinal illnesses. Even with treatment mortality is high. Persons with these risk factors should be warned not to consume potentially contaminated foods.

Waterborne

Waterborne disease surveillance includes recreational and drinking water exposure. Surveillance enhances early identification of contaminated water to reduce new cases or secondary spread of infections. An outbreak is defined as two or more ill persons with epidemiologic and/or laboratory evidence implicating a common water exposure. Suspected outbreaks should be reported promptly even without confirmatory laboratory tests. In 2000, no waterborne outbreaks were reported.

A wide range of agents may be waterborne: viruses (hepatitis A, Norwalk-like agents), bacteria (*E. coli* O157:H7, *Shigella*, *Campylobacter*, *Pseudomonas*) and parasites (*Cryptosporidia* and *Giardia*.)

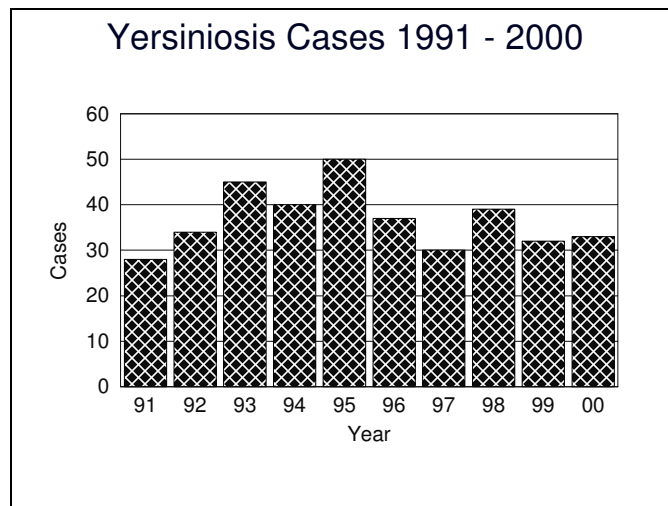
Waterborne Outbreaks, 1991-2000

Year	Agent	Ill	Circumstances
1991	<i>G. lamblia</i>	4	swimming lake
	<i>G. lamblia</i>	4	swimming lake
	<i>Pseudomonas</i>	8	home hot tub
	<i>Pseudomonas</i>	3	home hot tub
	<i>Pseudomonas</i>	2	home hot tub
	<i>Pseudomonas</i>	5	home hot tub
1992	hepatitis A	10	home well
	<i>Pseudomonas</i>	5	home hot tub
	<i>Pseudomonas</i>	3	home hot tub
1993	<i>Cryptosporidium</i>	7	home well
	Norwalk virus	604	swimming lake
	<i>G. lamblia</i>	6	swimming river
	<i>Pseudomonas</i>	2	home hot tub
1994	<i>Cryptosporidium</i>	4	home well
	<i>Cryptosporidium</i>	4	swimming river
1995	<i>Pseudomonas</i>	2	home hot tub
	<i>Pseudomonas</i>	5	home hot tub
1996	<i>Cryptosporidium</i>	2	home well
	<i>Pseudomonas</i>	18	home hot tub
1997	<i>E. coli</i> O157:H7	2	home well
1998	viral	248	swimming lake
	viral	58	swimming lake
1999	viral	46	creek water
	viral	68	well
	<i>E. coli</i> O157:H7	36	swimming lake

Yersiniosis

Yersinia enterocolitica and less commonly *Y. pseudotuberculosis* can cause acute bacterial infections with watery diarrhea, abdominal pain that may mimic appendicitis, fever, headache, sore throat, vomiting, and skin lesions. Complications include arthritis, skin ulcers, bone infections, liver or spleen abscesses, and sepsis.

Wild and domestic animals are reservoirs for yersiniosis. Raw pork, pork chitterlings, cross-contaminated food (reported to have occurred with tofu and chocolate milk), and animal contact may be risk factors for infection. *Yersinia* can multiply in food under refrigeration. The incubation period is three to seven days. Fecal shedding can persist for months.



There were 33 cases in 2000. Six cases occurred in children less than a year of age and an additional four children were one to two years of age.