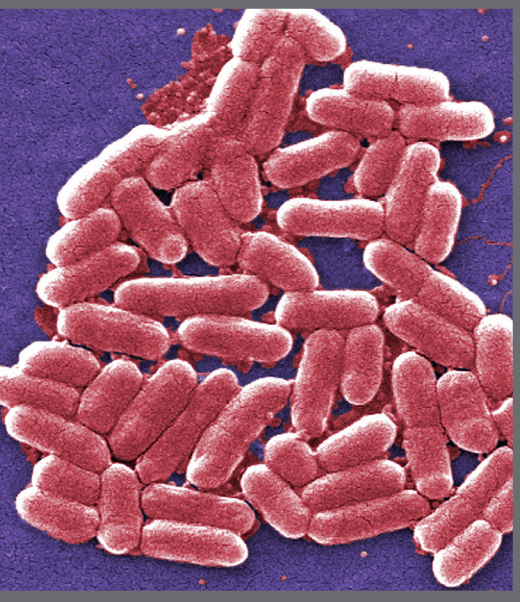
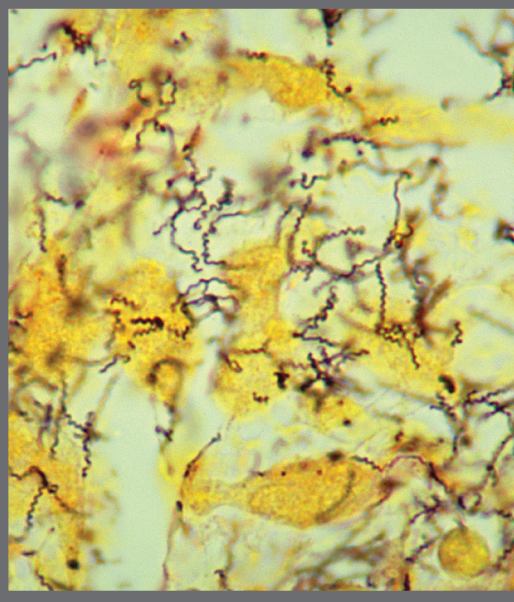
# Selected Reportable Communicable Disease Summary

## 2011 State of Oregon





Oregon Health Authority
PUBLIC HEALTH DIVISION

# Selected Reportable Communicable Disease Summary 2011 State of Oregon

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## About surveillance data

Oregon law specifies diseases of public health importance that must be reported to local public health authorities by diagnostic laboratories and health care professionals. This report reflects reporting laws in effect for 2011. In general, local public health officials investigate reports of a communicable disease to characterize the illness and collect demographic information about the case, to identify possible sources of the infection, and to take steps to prevent further transmission. Basic information about each case is forwarded to the Oregon Public Health Division. In some cases (e.g., *Salmonella* infection), laboratories are required to forward bacterial isolates to the Oregon State Public Health Laboratory for sub-typing. Together, these epidemiologic and laboratory data constitute our communicable disease surveillance system; data from 2011 and trends from recent years are summarized in this report.

But *caveat lector*! Disease surveillance data have many limitations.

First, for most diseases, reported cases represent but a fraction of the true number. The most important reason for this is that many patients — especially those with mild disease — do not present themselves for medical care. Even if they do, the health care professional may not order a test to identify the causative microorganism. The reader may be scandalized to learn that not every reportable disease gets reported as the law requires. Cases are "lost" to surveillance along each step of the path from patient to physician to laboratory to public health department; in the case of salmonellosis, for example, reported cases are estimated to account for approximately 3% of the true number.

Second, cases that do get reported are a skewed sample of the total. More severe illnesses (e.g., meningococcal disease) are more likely to be reported than milder illnesses. Infection with hepatitis A virus is more likely to cause symptoms (and those symptoms are more likely to be severe) in adults than in children. Testing is not random; clinicians are more likely to test stool from children with bloody diarrhea for *E. coli* O157 than they are to test stool from adults with bloody diarrhea. Health care professionals may be more inclined to report contagious diseases such as tuberculosis — where the public health importance of doing so is obvious — than they are to report non-contagious diseases such as Lyme disease. Outbreaks of disease or media coverage about a particular disease can greatly increase testing and reporting rates.

For all conditions except the sexually transmitted disease (STD) chapter, population estimates for rate calculations were obtained from the Center for Population Research at Portland State University (www.pdx.edu/prc). Using rates instead of case counts allows for comparisons between populations of different sizes — e.g., United States versus Oregon. Rates are usually reported as cases per 100,000 persons per year. However, if the population in which the rate is calculated is very small (e.g., in "frontier" counties in Oregon), a case or two might mean

the difference between a rate of zero and a very high rate. To compensate for this, some of our maps showing rates by county give an average over multiple years of data or report case counts per county. Even with this aggregation, for some conditions, the number of cases remains small. In addition, the rates presented are not adjusted for age due to the small number of cases in each age group. In the STD chapter, National Center for Health Statitics bridged population estimates are used for rate calculations. For 2011 rates, 2010 estimates were used as estimates were not yet available. These population estimates were used because the race and ethnicity denominators in censuses from the 1990s, 2000 and 2010 were not comparable to one another. Using the bridged population estimates allows reliable calculation of rates by race and ethnicity across the turn of the century.

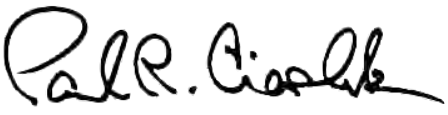
Incidence is annualized by onset date unless otherwise stated. Case counts include both confirmed and presumptive cases.

Also keep in mind that cases are assigned to the county of residence at the time of the report — not to the county in which the case received medical care, or the county where the exposure to infection occurred.

Even with these limitations, surveillance data are valuable in a variety of ways. They help identify demographic groups at higher risk of illness. They allow analysis of disease trends and identify outbreaks of disease.

With this in mind, we present the 2011 communicable disease summary. We present 24 years of case counts whenever possible. For most of the diseases, we include the following: figures showing case counts by year for the past 24 years; aggregate case counts by month to demonstrate any seasonal trends; incidence by age and sex; incidence in Oregon compared to national incidence over the past 24 years; and incidence by county. When appropriate, additional data on subtypes or risk factors for infection are included. At the end of this report you will find a tally of disease outbreaks reported in the past year, a summary of enhanced data on gastroenteritis outbreaks, a summary table of statewide case counts over the past 20 years and disease totals by county.

We hope that, with all their limitations, you will find these data useful. If you have additional questions, please call our epidemiology staff at 971-673-1111 or email ohd.acdp@state.or.us.



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## Campylobacteriosis

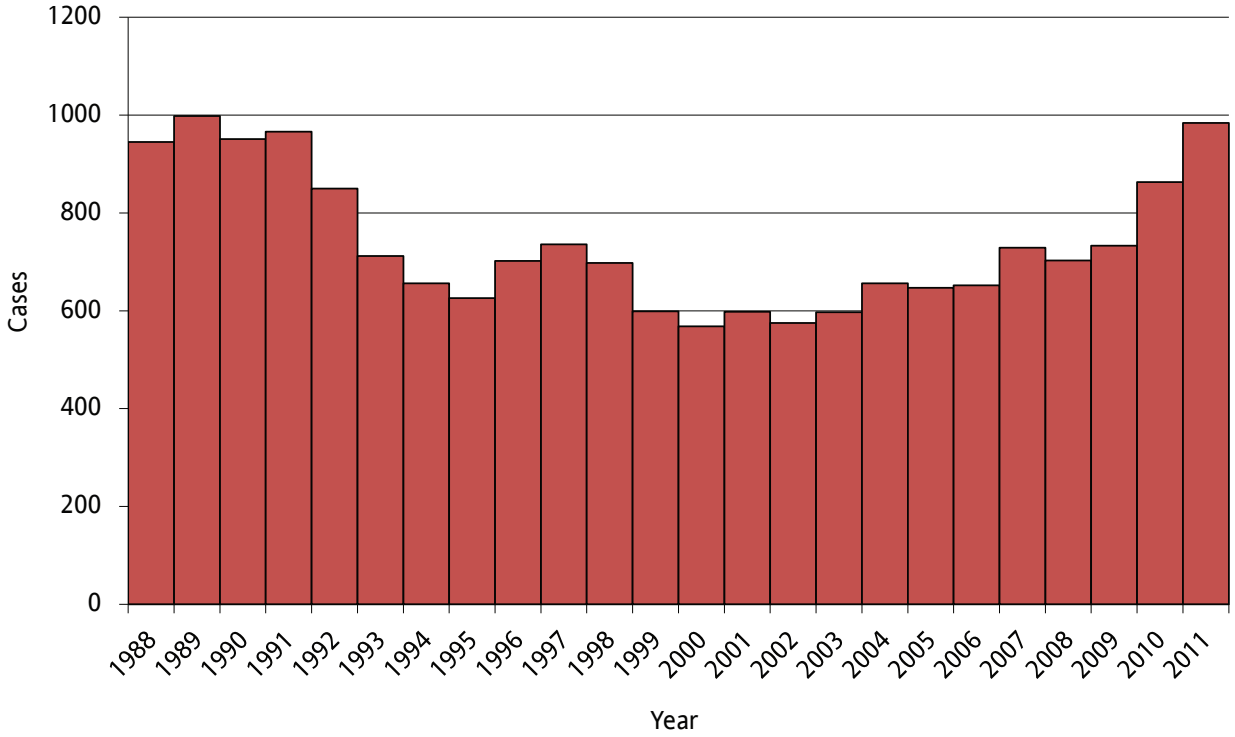
Campylobacteriosis is caused by a Gram-negative bacterium. It is characterized by acute onset of diarrhea, vomiting, abdominal pain, fever and malaise. Campylobacteriosis is the most common bacterial enteric infection reported. It is of worldwide epidemiologic importance due to the fecal-oral route of infection and the extensive reservoir of the organism in both wild and domestic animals.

In 2011, Oregon's rate, 25.6 cases per 100,000, was a historic high.The cause of this increase is unknown. Children aged 0–4 years have the highest rates of illness. Infections occur year-round in Oregon, with peak incidence in the summer months. Rates are highest in Gilliam, Harney, Lake and Malheur counties.

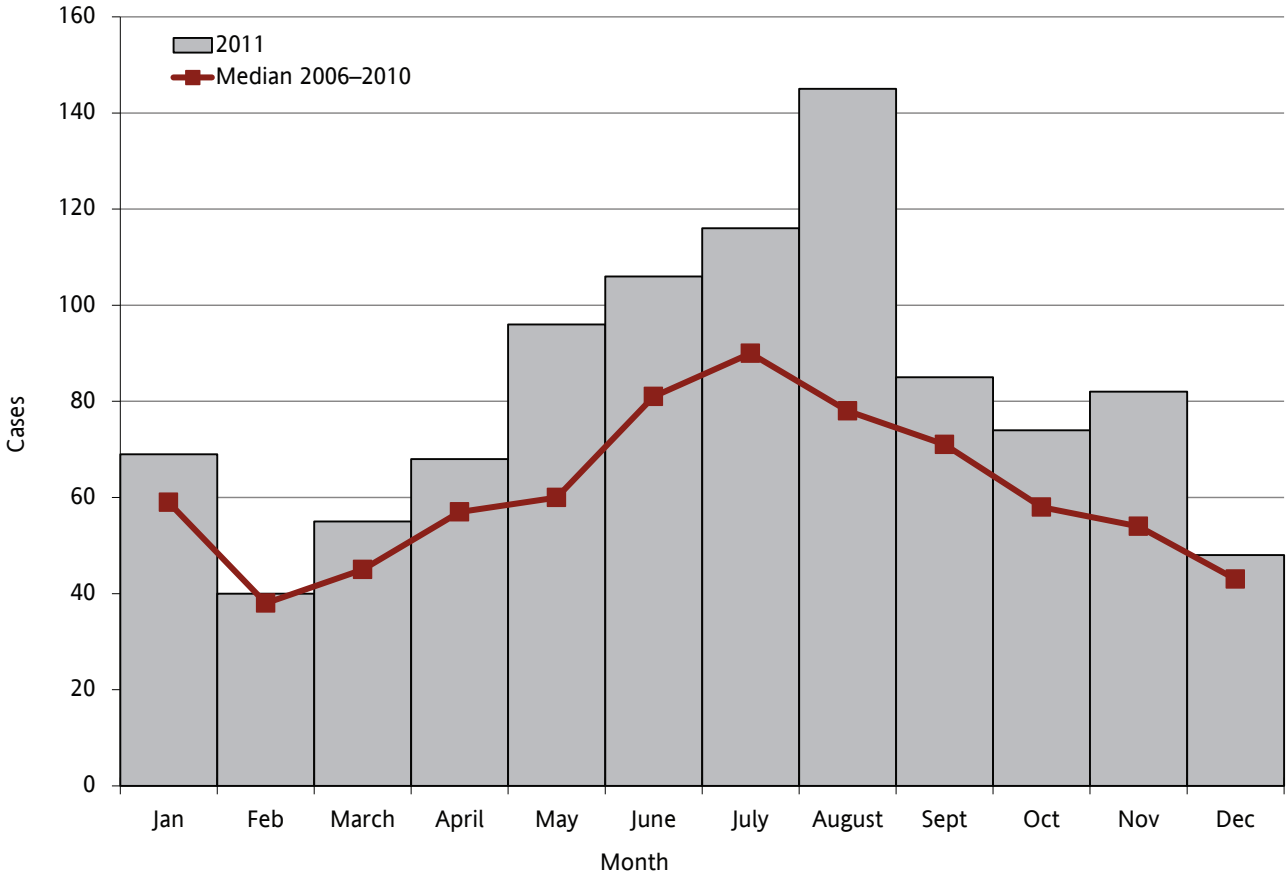
Campylobacteriosis is not a nationally reportable condition, but U.S. estimates from the FoodNet program (of which Oregon is a member) indicate that campylobacteriosis incidence continues to increase from 13.5 cases per 100,000 in 2010 to 14.31 per 100,000 in 2011.

Most illnesses are sporadic, but outbreaks may be associated with undercooked meat (often chicken), unpasteurized milk, direct contact with animals or non-chlorinated water. Since 1998, eight outbreaks of campylobacteriosis have been investigated: three foodborne, two waterborne, two from animal contact, and one of unknown etiology. Proper food handling and water treatment, along with good hygienic practices (hand washing!) are the keys to prevention. No outbreaks of campylobacteriosis were reported in 2011.

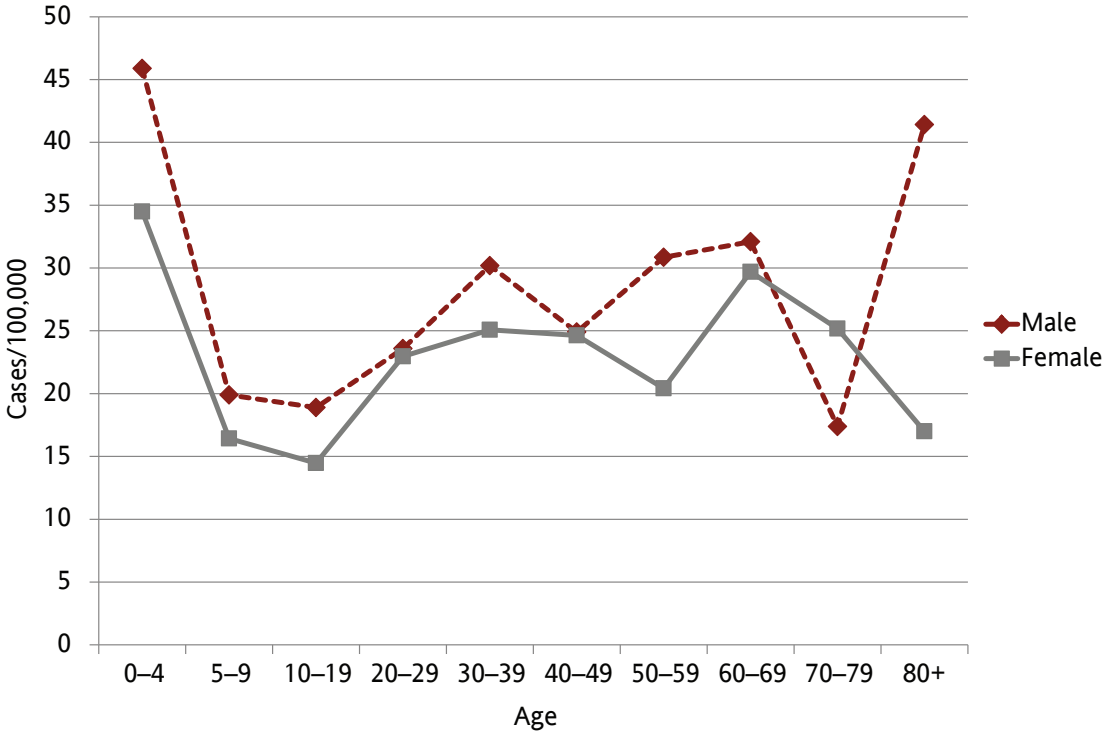
## Campylobacteriosis by year: Oregon, 1988–2011



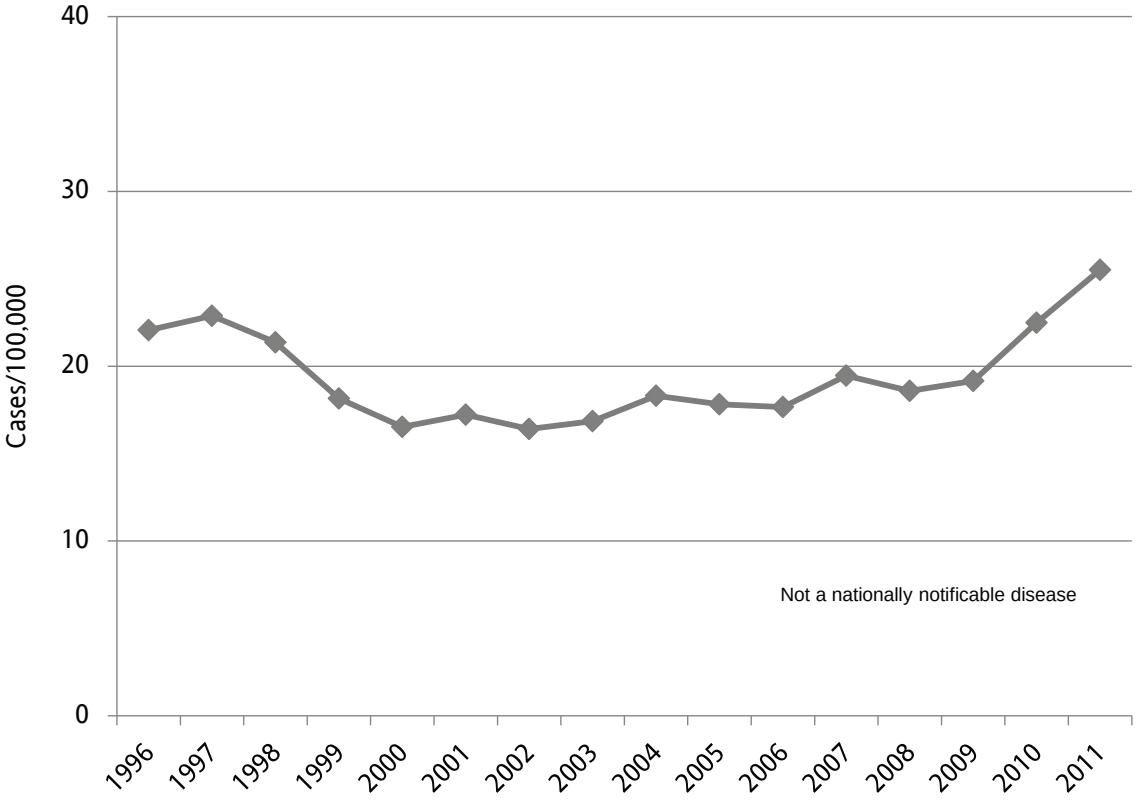

## Campylobacteriosis by report month: Oregon, 2011



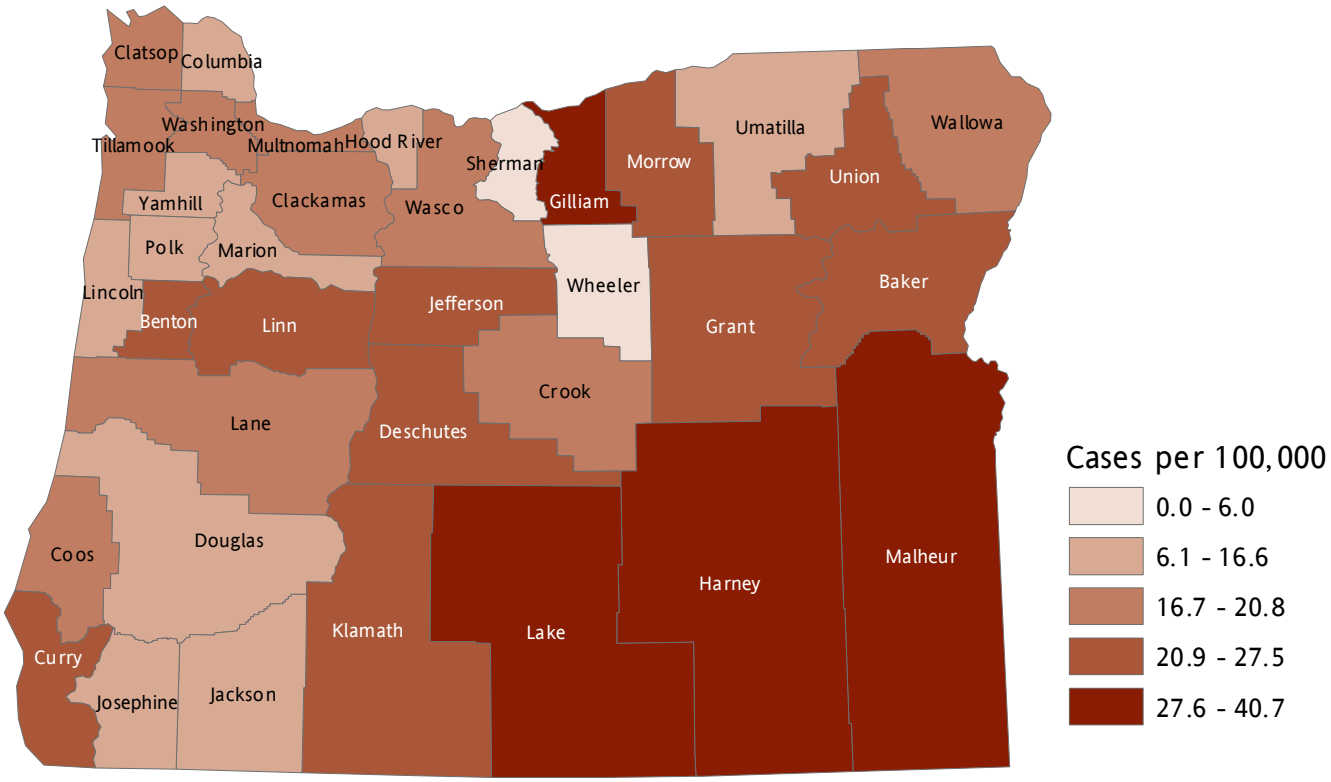
## Incidence of campylobacteriosis by age and sex: Oregon, 2011




## Incidence of campylobacteriosis: Oregon, 1996–2011



## Incidence of campylobacteriosis by county of residence: Oregon, 2002–2011



## Cryptosporidiosis

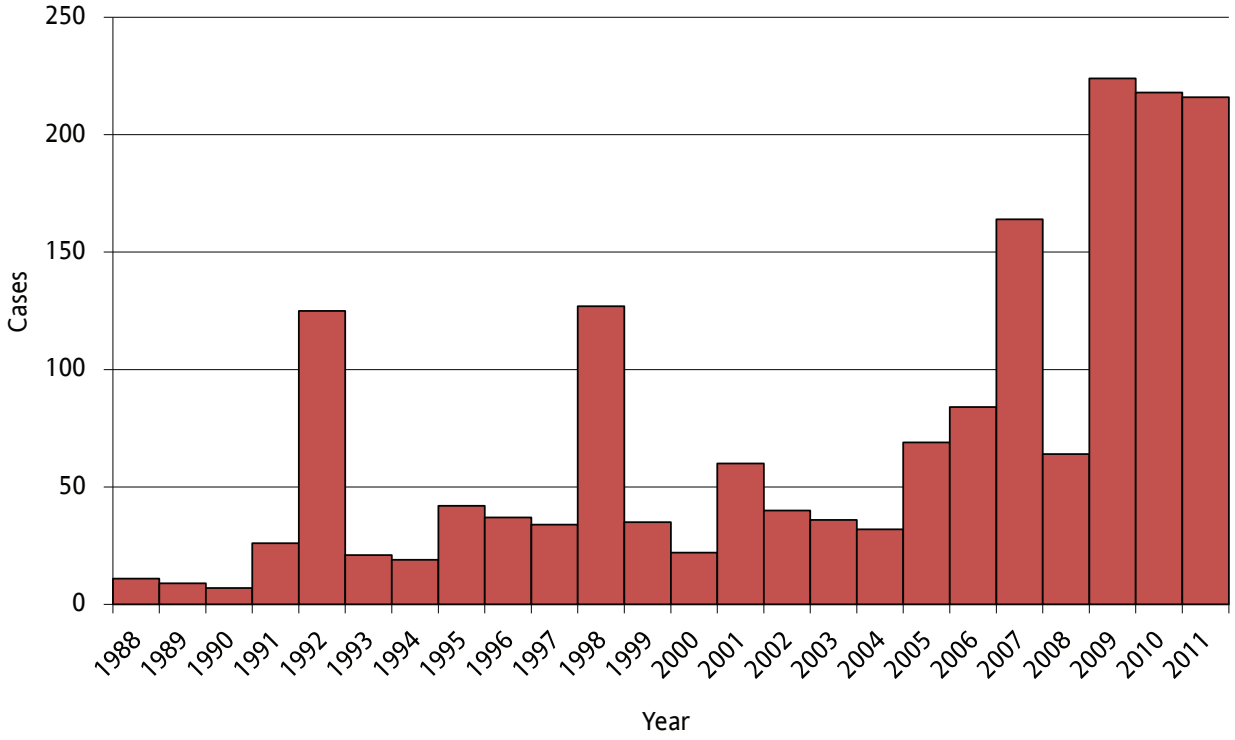
Cryptosporidiosis in humans results from infection with protozoal parasites in the genus *Cryptosporidium* — most commonly *C. hominis* or *C. parvum*. Symptomatic infections are characterized by watery diarrhea and abdominal cramps. Symptoms typically resolve in one to four weeks in immunocompetent persons. Infections can be difficult to control among the immunocompromised. Studies suggest that the prevalence of cryptosporidiosis among young children, particularly those in large child care facilities, is surprisingly high. Many of these infections are asymptomatic.

In Oregon the rate of infection with *Cryptosporidium* is slightly lower than 2010 but remains elevated from rates observed at the millennium. Nationally infections were on the rise in the early millennium but incidence has stablized since 2009. Cases occur year-round with peak reports of illness in August, coincident with increases in exposure to recreational water.

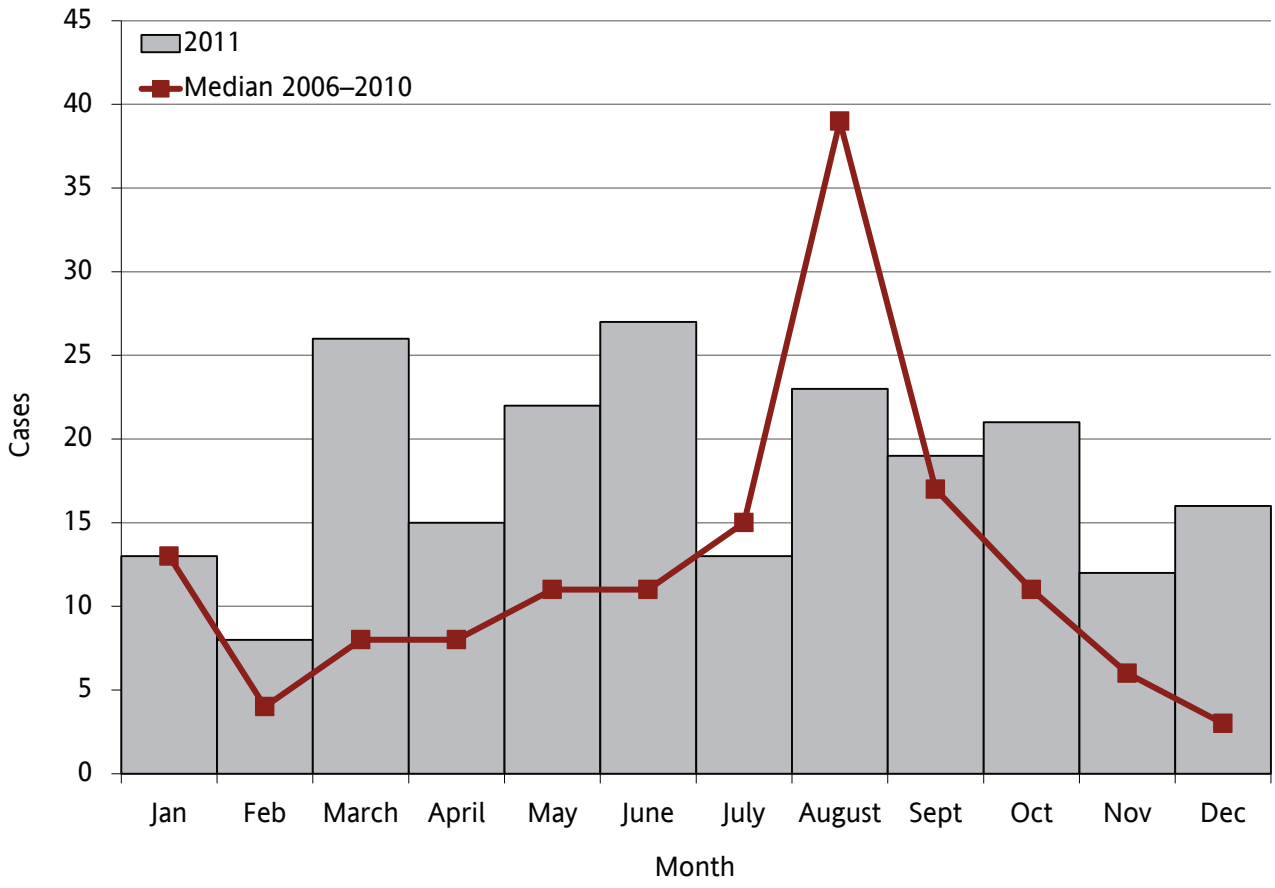
New antigen tests for *Cryptosporidium* might be playing a role in these fluctuations. In 2011, 216 cases were reported, down from an Oregon record of 220 cases in 2009. In 2007, the Oregon investigative guidelines were changed to reflect the increasing numbers of cases; previously, investigations were required only for abnormally high case counts. All cases are now routinely investigated to identify the source of infection. One animal-associated outbreak in 2011 accounted for 10 Oregon cases.

Given the number of asymptomatic and undiagnosed infections, surveillance data can be difficult to interpret. However, these data have been used to identify a number of outbreaks over the years, most commonly associated with child care or water (both drinking and recreational).

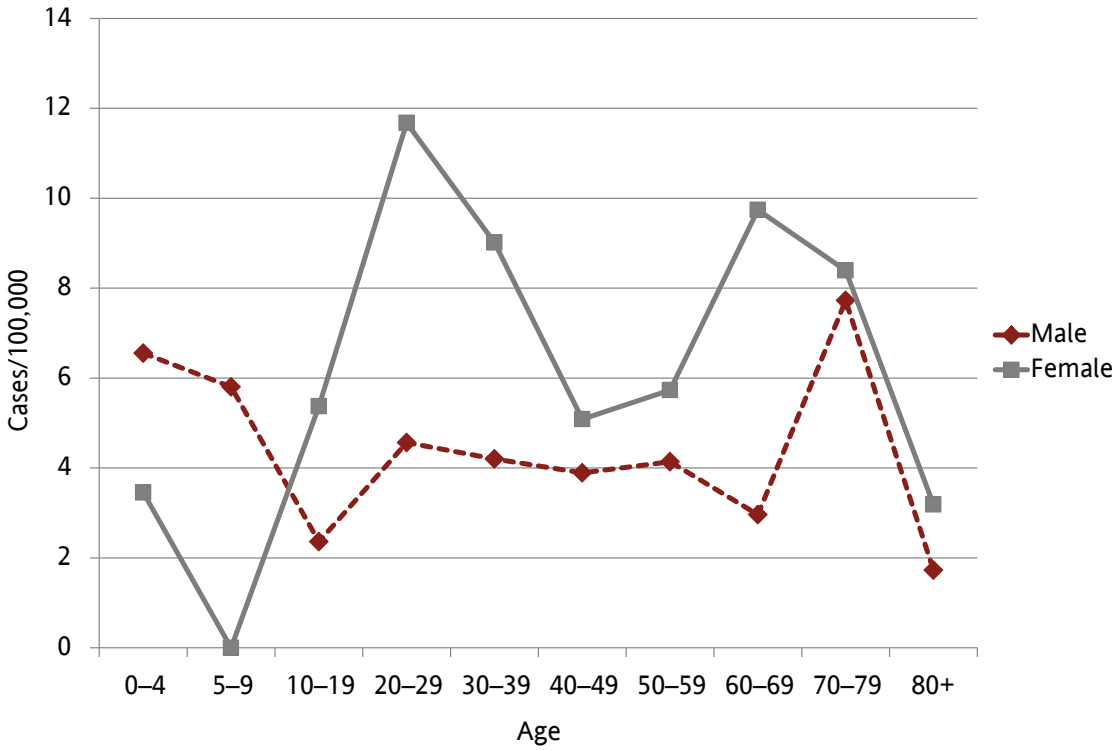
## Cryptosporidiosis by year: Oregon, 1988–2011



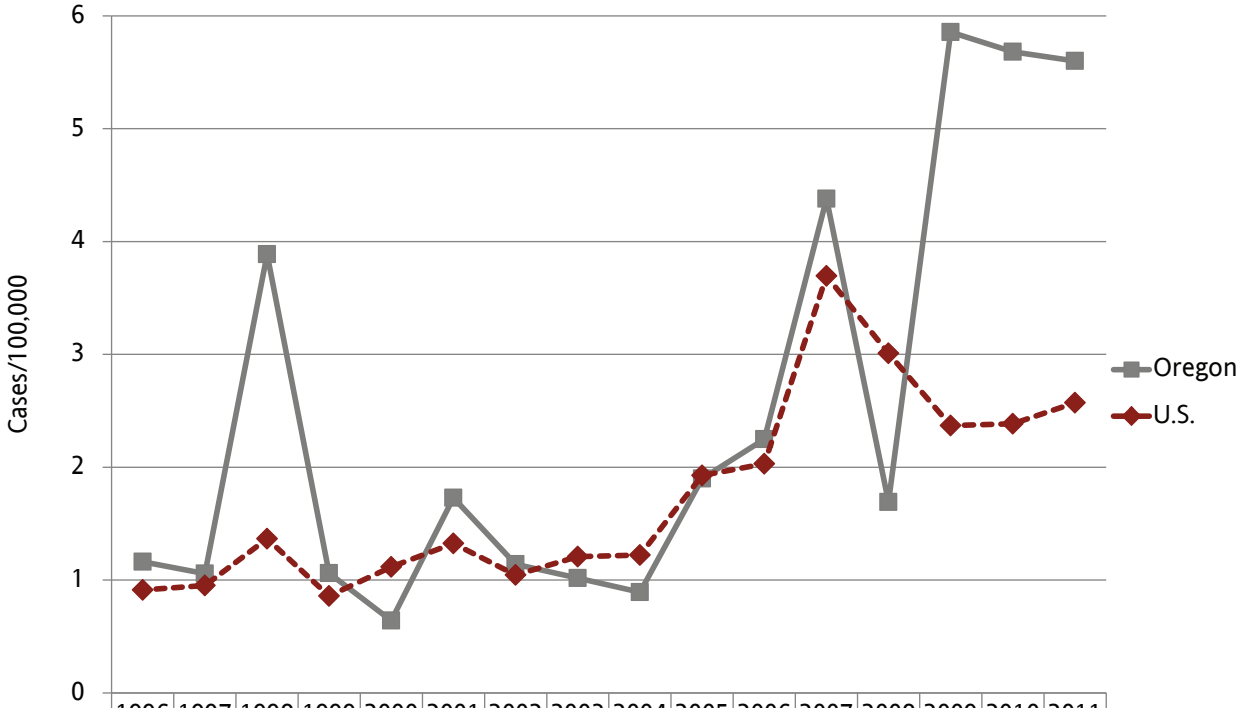

## Cryptosporidiosis by onset month: Oregon, 2011



## Incidence of cryptosporidiosis by age and sex: Oregon, 2011

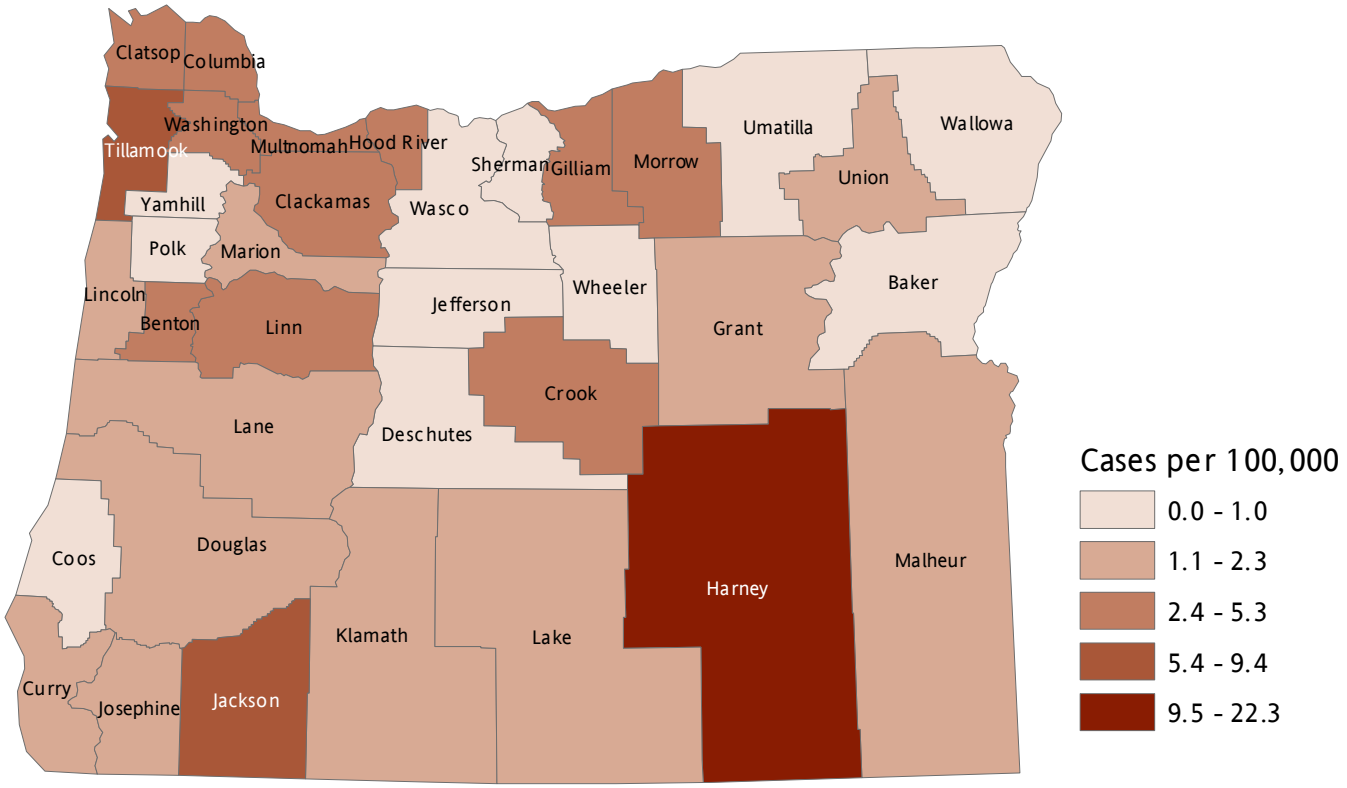



## Incidence of cryptosporidiosis: Oregon vs. nationwide, 1996–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 1.2 | 1.1 | 3.9 | 1.1 | 0.6 | 1.7 | 1.1 | 1.0 | 0.9 | 1.9 | 2.2 | 4.4 | 1.7 | 5.9 | 5.7 | 5.6 |
| U.S. | 0.9 | 1.0 | 1.4 | 0.9 | 1.1 | 1.3 | 1.0 | 1.2 | 1.2 | 1.9 | 2.0 | 3.7 | 3.0 | 2.4 | 2.4 | 2.6 |

## Incidence of cryptosporidiosis by county of residence: Oregon, 2002–2011



## Dengue fever

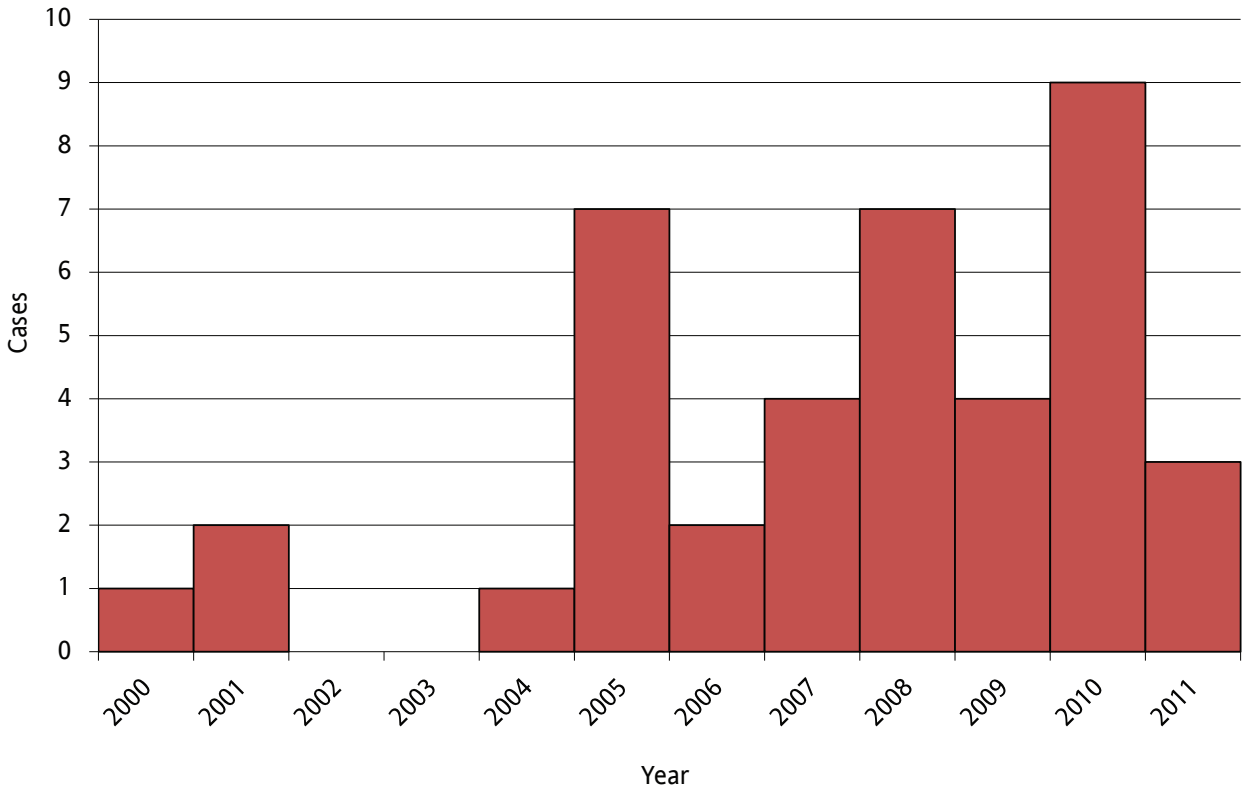
Dengue is a mosquito-borne viral infection. It is caused by a flavivirus (the same genus as West Nile virus and yellow fever) and there are four serotypes. The disease is limited primarily to the tropics and sub-tropics although occasional imported cases occur.

We don't have evidence of transmission here in Oregon. The typical vectors, *Aedes albopictus* and *Aedes aegypti*, are not native to Oregon, although there have been some reports of the former getting a foothold in California.

Symptom severity ranges from sub-clinical, asymptomatic infections (the norm) to high fever, headache, muscle aches and rash. A subset of patients may develop frank hemorrhagic fever, with bleeding diathesis and shock. There is no immunization available and treatment is supportive.

Three cases were reported in 2011.

### Dengue infection by year: Oregon, 2000–2011



## *Escherichia coli* O157 and other Shiga toxin-producing *Escherichia coli* (STEC) infections

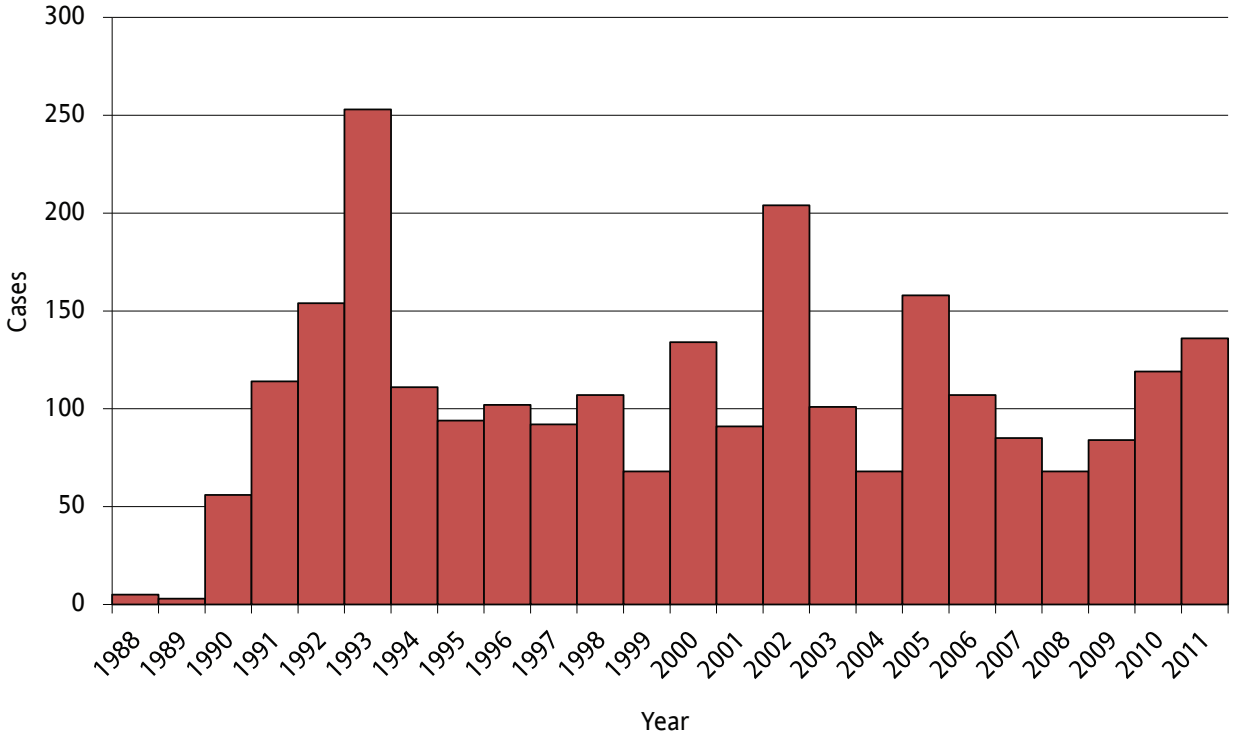
*Escherichia coli* O157 (O157) has become one of the most feared common causes of infectious diarrhea. Oregon has been the setting for many O157 outbreaks, and investigations of those outbreaks combined with the analysis of other surveillance information have contributed greatly to our understanding of this pathogen. Spread by the fecal-oral route, O157 has a number of animal reservoirs, the most important of which are ruminants, including cattle, goats, sheep, deer and elk. Transmission often occurs from consumption of contaminated food or water, as well as direct person-to-person spread and environmental exposures.

Mid-to-late summer is the peak season for *E. coli* O157 infections. The overall number of STEC cases has steadily increased from a low of 68 in 2008 to 136 in 2011. This trend is driven entirely by increasing recognition of non-O157 serotypes; the numbers for O157 infections specifically changed very little in the past four years (61 to 72 in 2008–2011; 69 in 2011). More labs are testing for the presence of Shiga toxin rather than just O157. Unfortunately, at the same time many labs are dropping culture-based methods, leaving clinicians (and epidemiologists) in the dark as to the specifics of the etiologic agent, and putting more of the diagnostic burden on the public health reference lab.

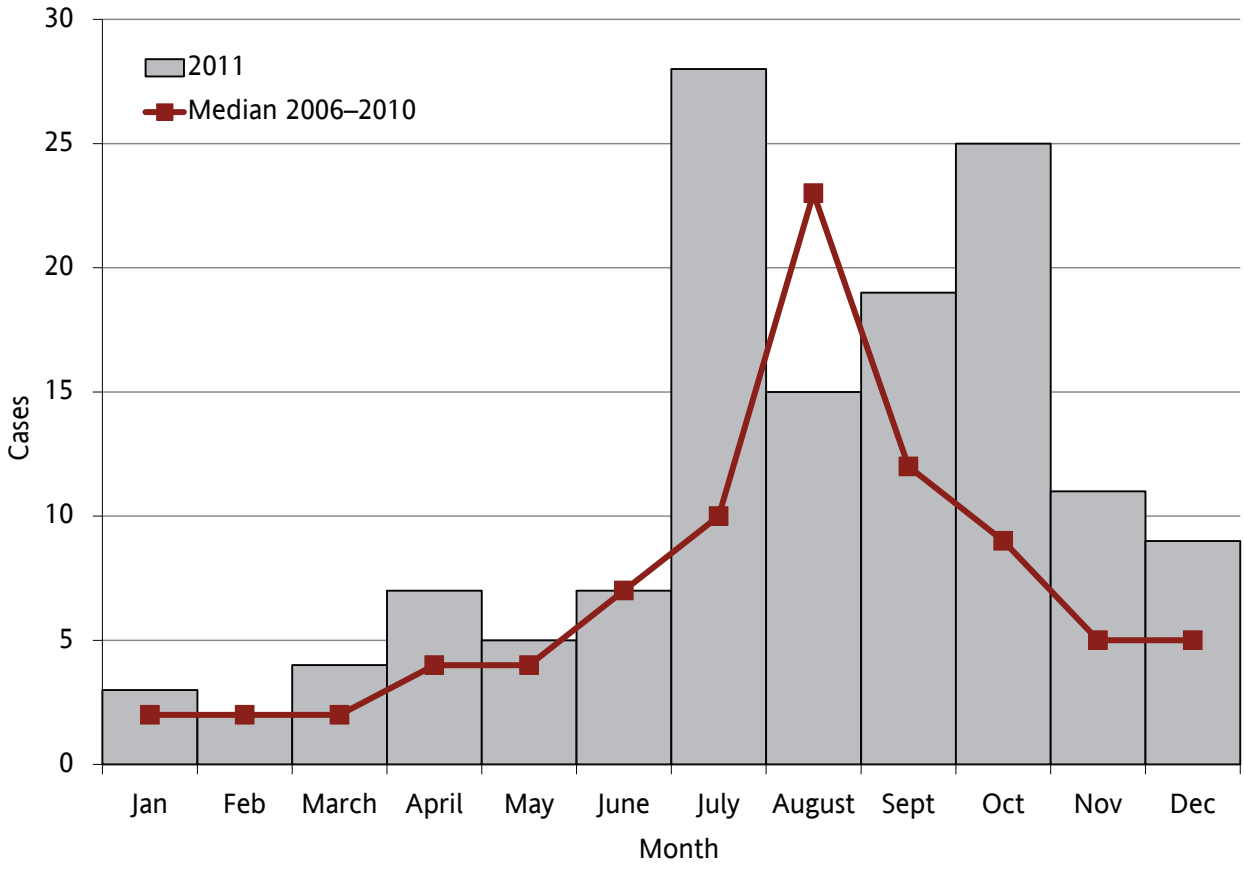
We investigated at least four clusters of O157 infections in 2011. Most were tiny (≤3 cases). The most newsworthy outbreak involved 15 cases that were quickly traced to consumption of locally grown strawberries contaminated with deer feces. Two of the victims died.

In 2011, 59 (46%) of the lab-confirmed STEC infections reported comprised non-O157 serogroups. The most common in 2011 were O103 (N = 12), O111 (5) and O121 (2).

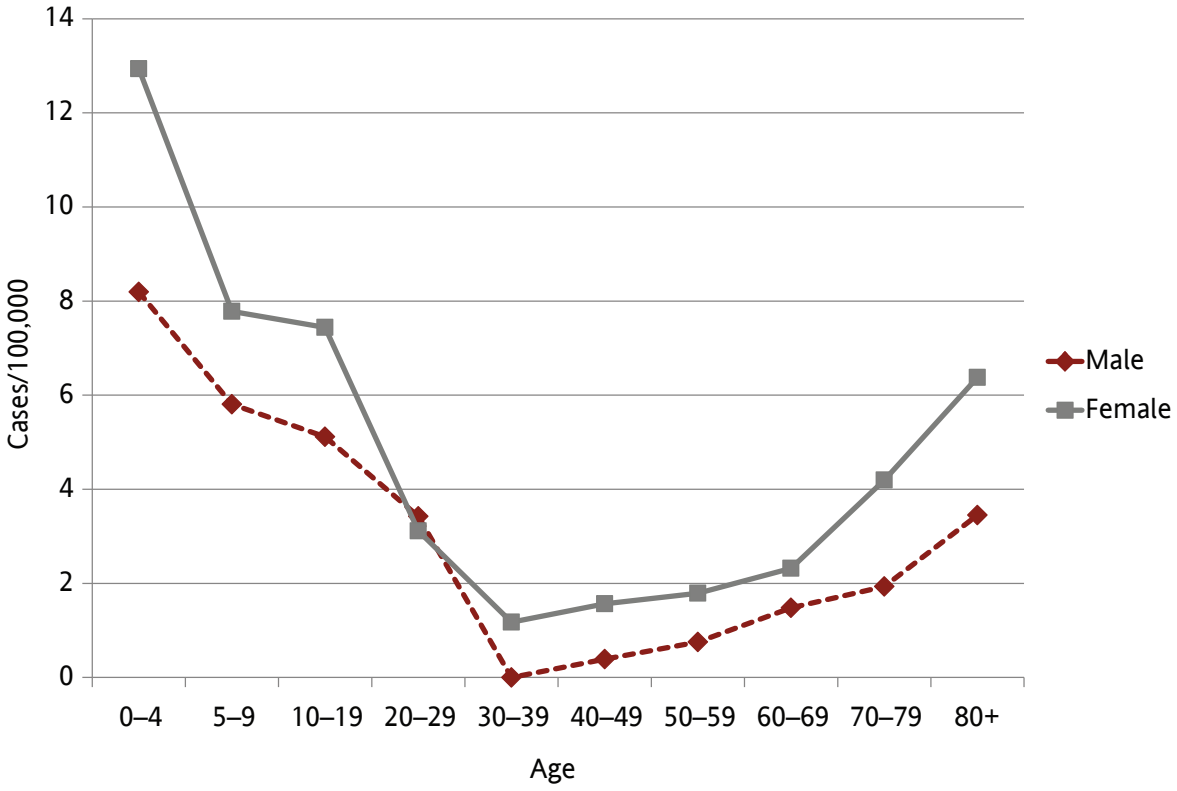
## STEC infection by year: Oregon, 1988–2011



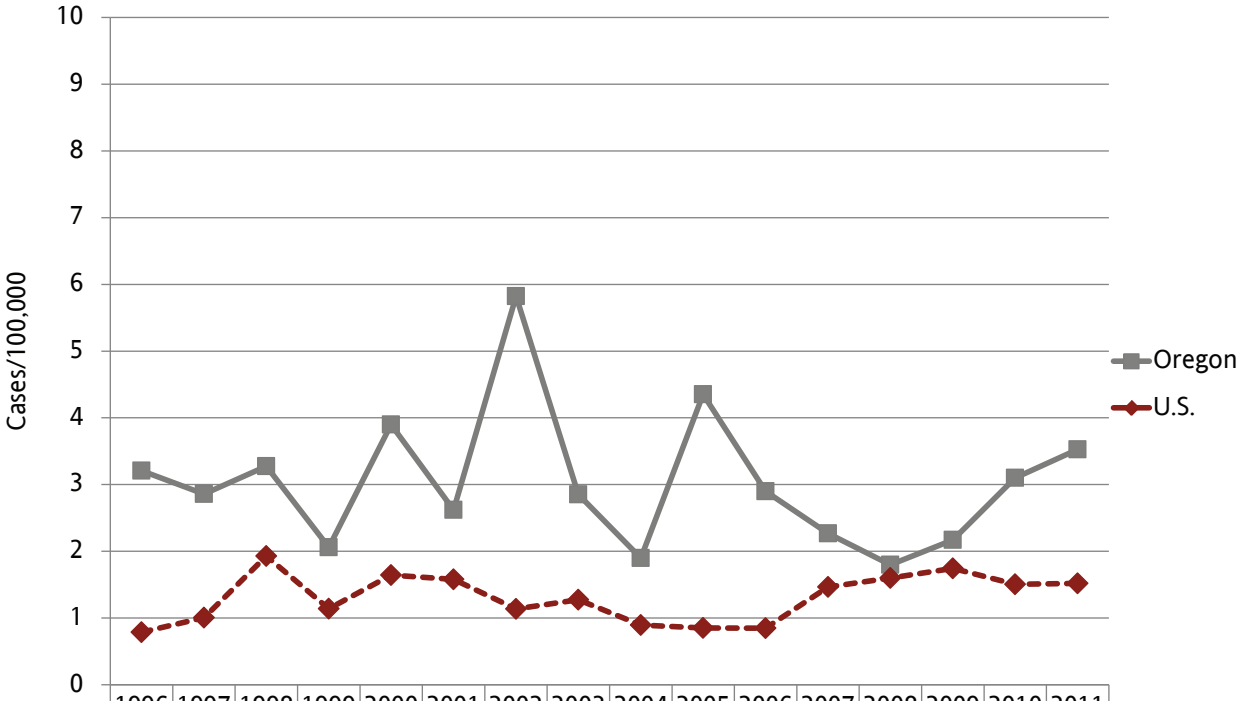

## STEC infection by onset month: Oregon, 2011



## Incidence of STEC infection by age and sex: Oregon, 2011

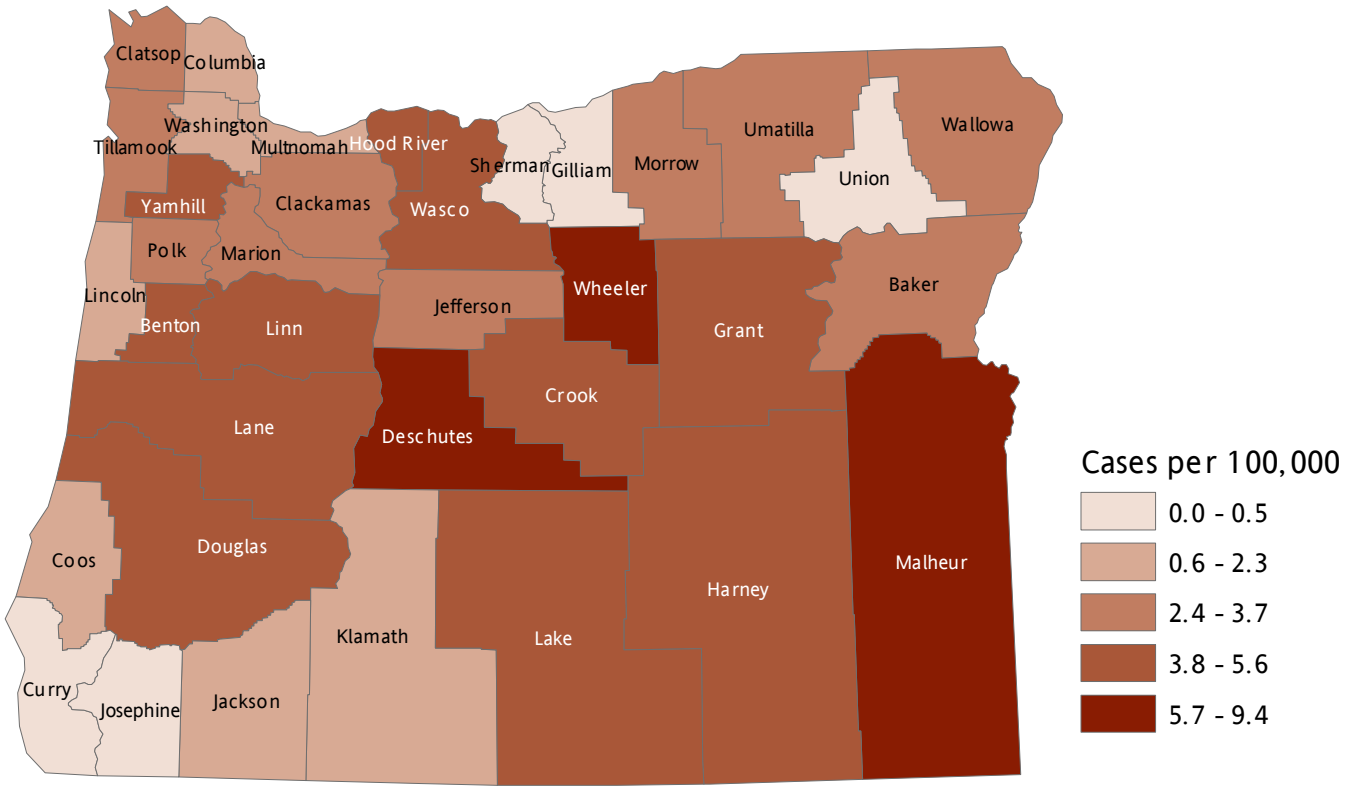



## Incidence of STEC infection: Oregon vs. nationwide, 1996–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 3.2 | 2.9 | 3.3 | 2.1 | 3.9 | 2.6 | 5.8 | 2.9 | 1.9 | 4.4 | 2.9 | 2.3 | 1.8 | 2.2 | 3.1 | 3.5 |
| U.S. | 0.8 | 1.0 | 1.9 | 1.1 | 1.6 | 1.6 | 1.1 | 1.3 | 0.9 | 0.9 | 0.8 | 1.5 | 1.6 | 1.7 | 1.5 | 1.5 |

## Incidence of STEC infection by county of residence: Oregon, 2002–2011



## Giardiasis

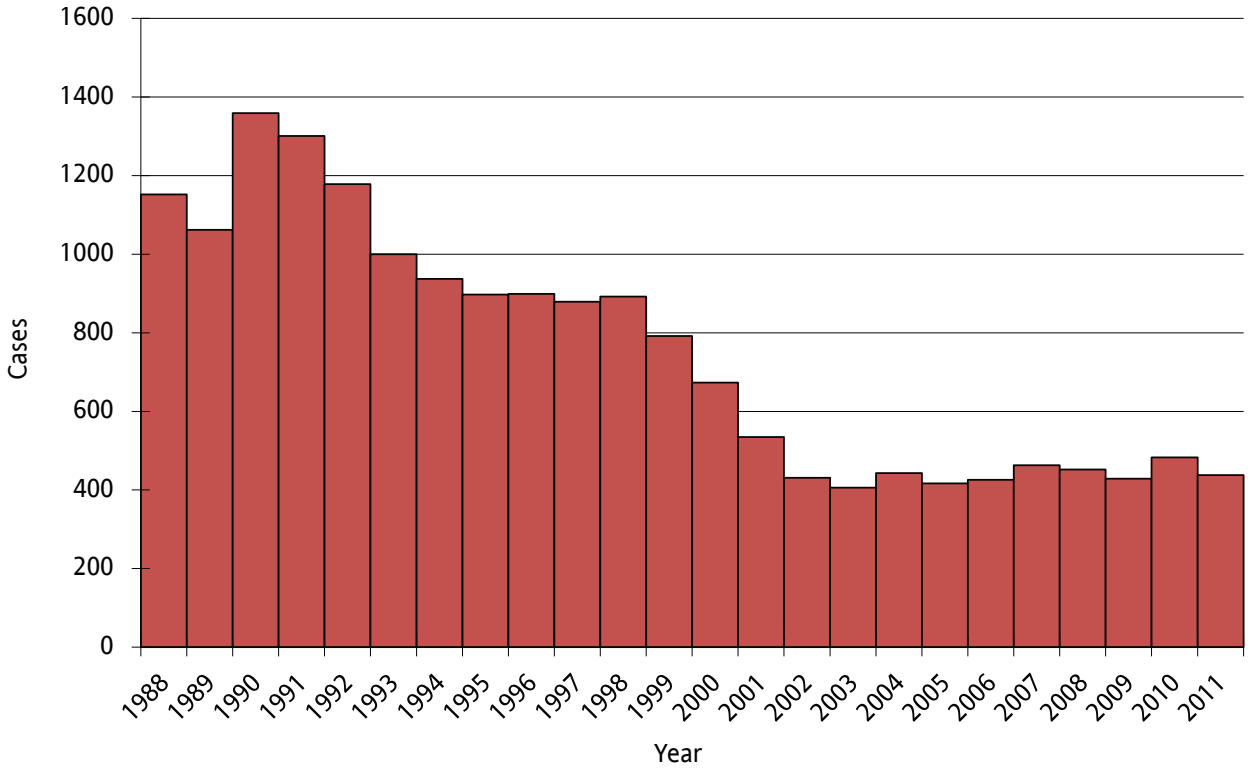
*Giardia intestinalis*, the flagellated protozoan originally named *G. lamblia*, is the most commonly identified parasitic pathogen in the United States. Children in daycare and their close contacts are at greatest risk, as are backpackers and campers (by drinking unfiltered, untreated water), persons drinking from shallow wells, travelers to disease-endemic areas, and men who have sex with men. *Giardia* cysts can be excreted in the stool intermittently for weeks or months, resulting in a protracted period of communicability. Transmission occurs when as few as 10 cysts are ingested through person-to-person or animal-to-person contact, or by ingestion of fecally contaminated water or food.

The majority of *Giardia* infections occur without symptoms. When symptomatic, patients report chronic diarrhea, steatorrhea, abdominal cramps, bloating, frequent loose and pale greasy stools, fatigue, and weight loss.

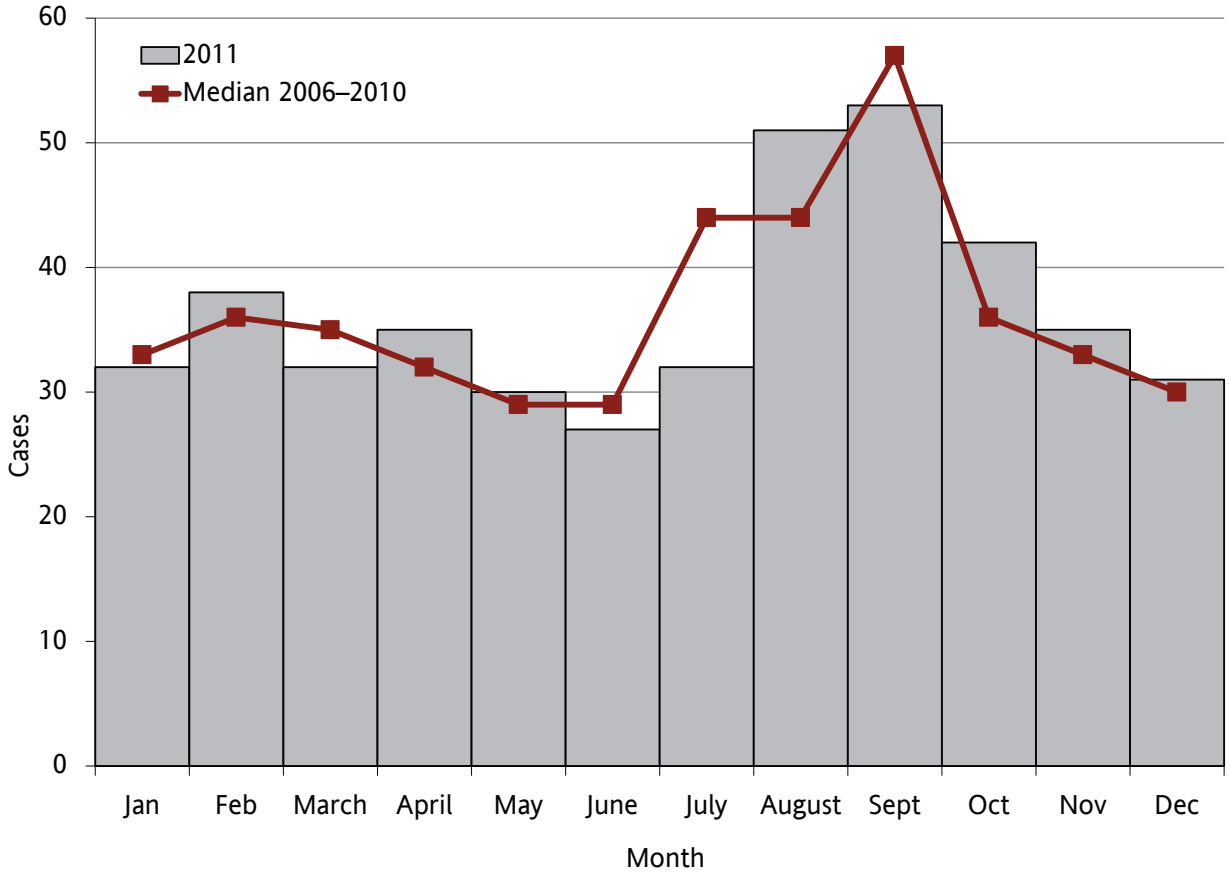
In 2011, the reported incidence of giardiasis in Oregon remained twice that of the rest of the United States, with 11.4 cases per 100,000 population. Fifty-one percent of 2011 cases were reported as sporadic, 10% as household-associated; one outbreak was reported. Children less than 5 years of age continue to have the highest incidence, with 29 cases per 100,000 population. Rates of infection tend to be higher in the summer months with transmission related to outdoor activities in or near untreated water.

Prevention depends upon good personal hygiene (hand washing!) and avoiding consumption of fecally contaminated water. Travel warnings on water quality should be heeded.

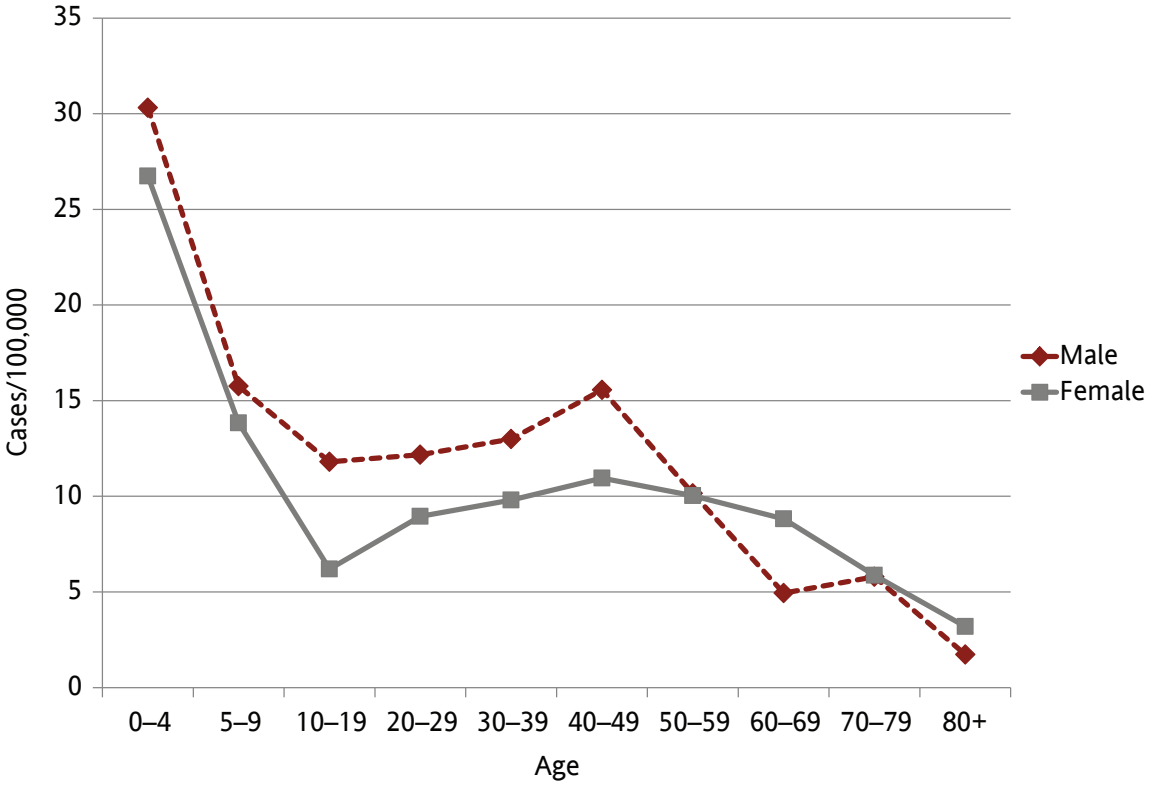
## Giardiasis by year: Oregon, 1988–2011



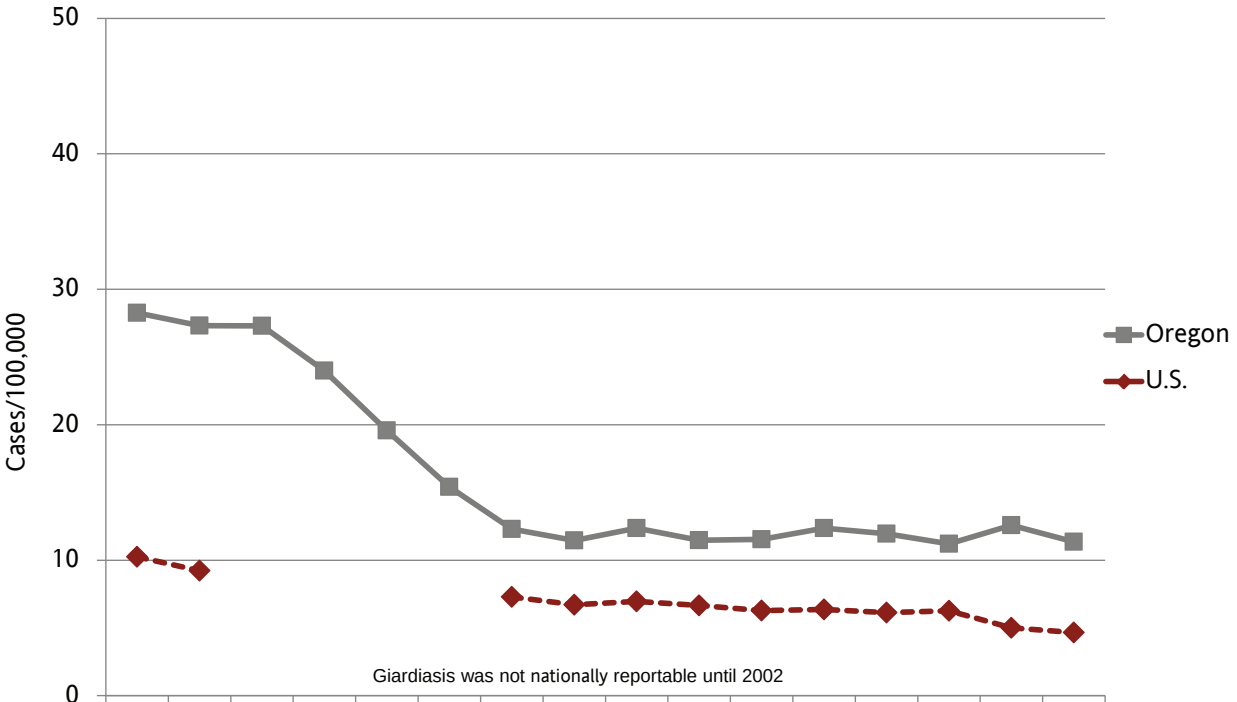

## Giardiasis by onset month: Oregon, 2011



## Incidence of giardiasis by age and sex: Oregon, 2011

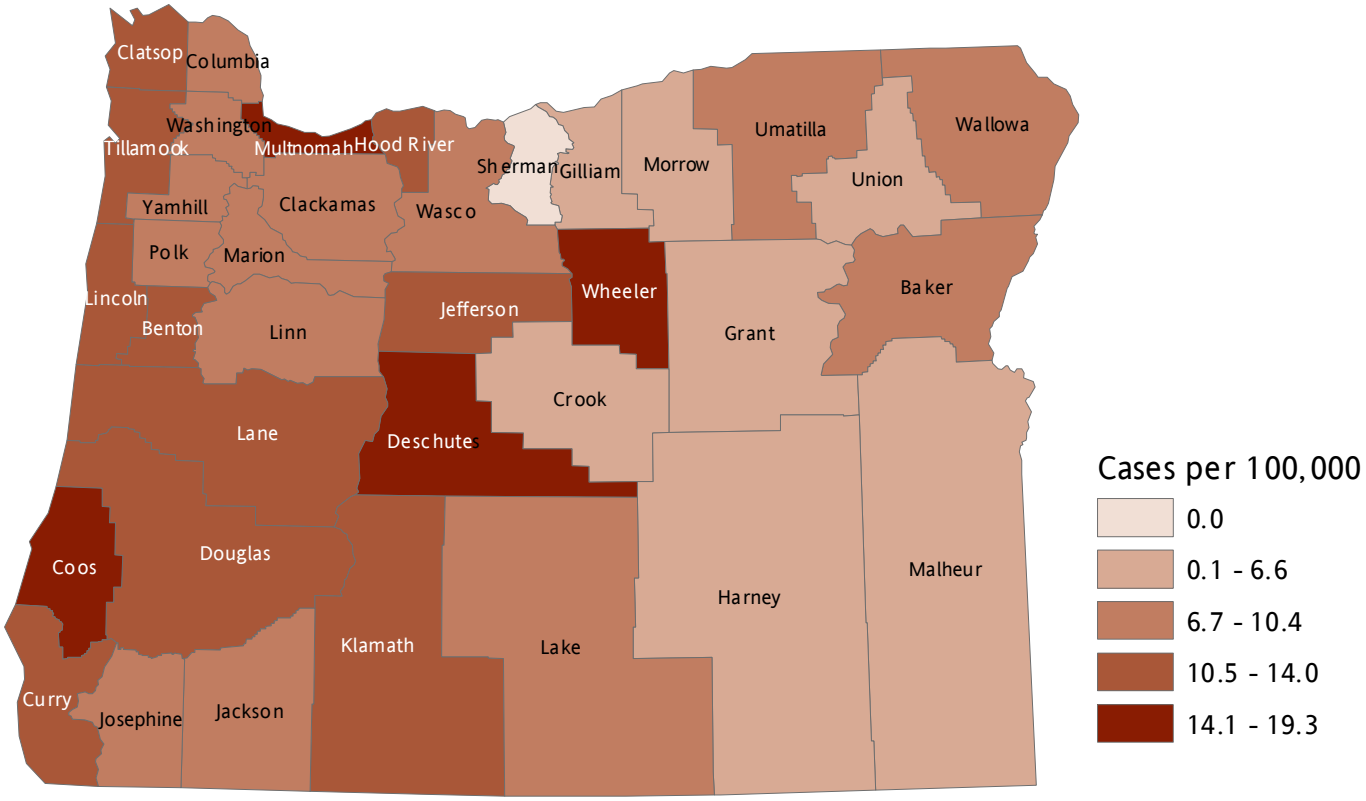



## Incidence of giardiasis: Oregon vs. nationwide, 1996–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 28.3 | 27.3 | 27.3 | 24.0 | 19.6 | 15.4 | 12.3 | 11.5 | 12.4 | 11.5 | 11.5 | 12.4 | 11.9 | 11.2 | 12.6 | 11.4 |
| U.S. | 10.3 | 9.2 | | | | | 7.3 | 6.7 | 7.0 | 6.7 | 6.3 | 6.4 | 6.1 | 6.3 | 5.0 | 4.7 |

## Incidence of giardiasis by county of residence: Oregon, 2002–2011



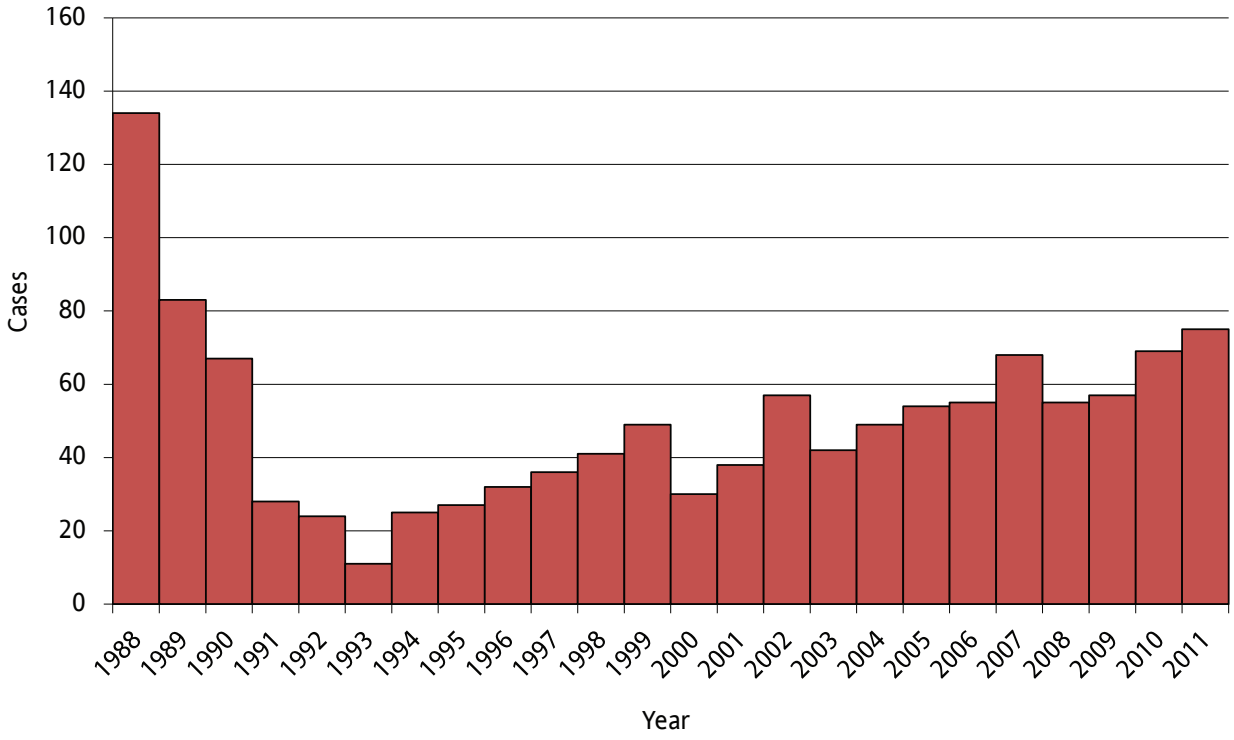
## *Haemophilus influenzae* infection

Until the advent of an effective vaccine against serotype b (Hib) organisms, *Haemophilus influenzae (H. influenzae)* was the leading cause of bacterial meningitis in children under 5 years of age in Oregon and elsewhere. It has dropped down in the rankings, and *Streptococcus pneumoniae* is now in the lead. In 2011, Hib was cultured from sterile body fluids in one person, a 31-year old female with no underlying conditions. Until September 2010, there had been no cases of Hib in a child less than 5 years of age since 2004. Appropriate use of conjugate vaccine will help ensure that Hib occurrence remains minimal well into the future. All sterile site *H. influenzae* isolates must be sent to the Oregon State Public Health Laboratory for additional typing.

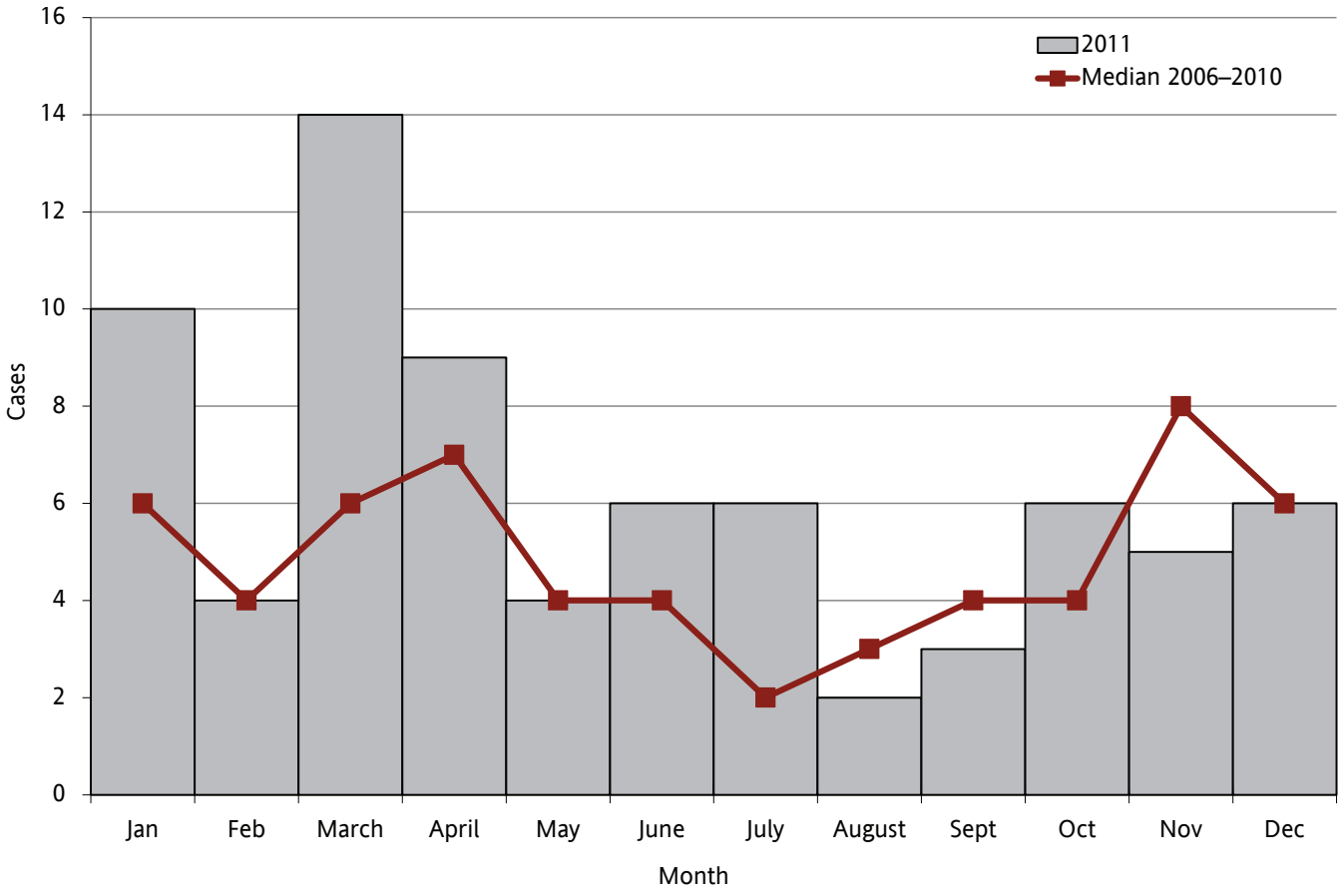
With the decline in invasive Hib disease in children, there has been increased recognition of non-serotype b and nontypeable cases in persons over 5 years of age, especially among those 65 years of age or older. In 2011, 70% of cases were nontypeable, 15% were identified as serotype f, and the remaining cases were other serotypes. The burden of invasive *Haemophilus influenzae* disease (IHiD) in 2011 was highest (7.42/100,000 persons) among those 65 years of age and older, followed by those 35–64 years (1.35/100,000 persons). Oregon is currently participating in an extensive CDC-sponsored retrospective chart review of IHiD among cases 65 years of age or older to better understand the burden of disease within this age group. In 2011, the top two clinical syndromes of invasive IHiD reported were bacteremic pneumonia (clinical pneumonia with a positive blood culture) (70%) and primary bacteremia (16%).

Peak incidence occurs in late winter and early spring. Seventy-four cases were reported in 2011.

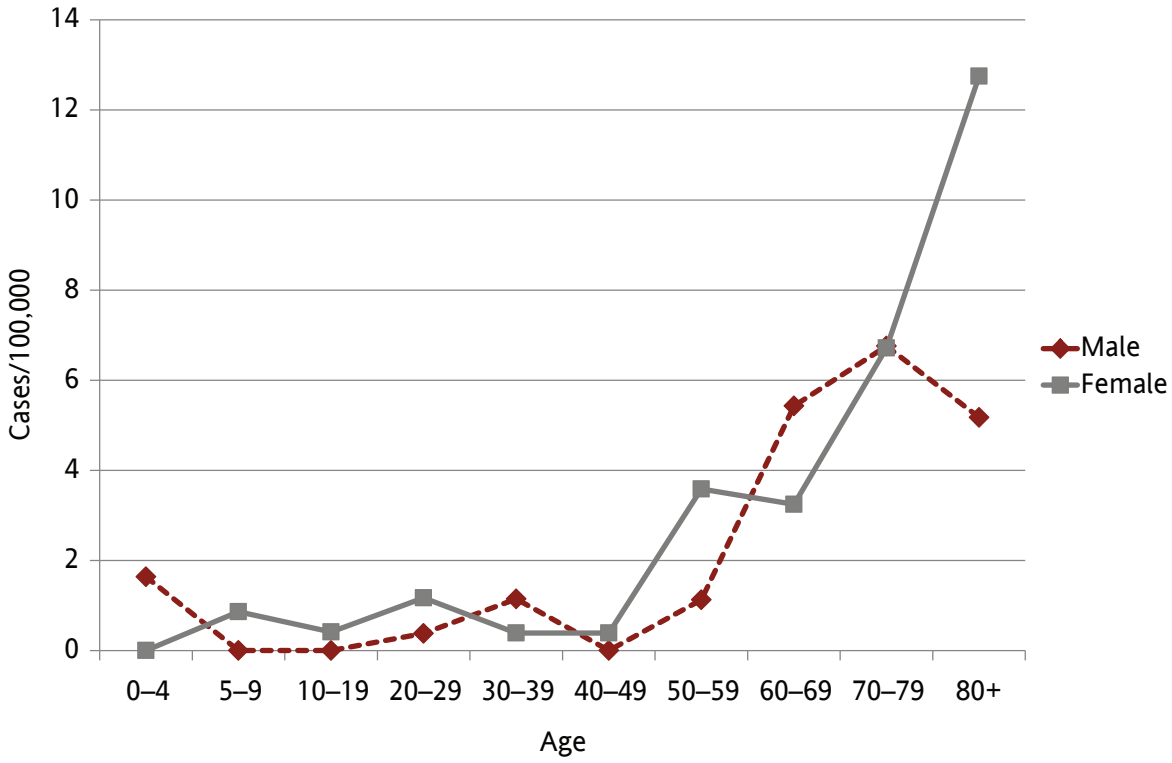
## *H. influenzae* infection by year: Oregon, 1988–2011



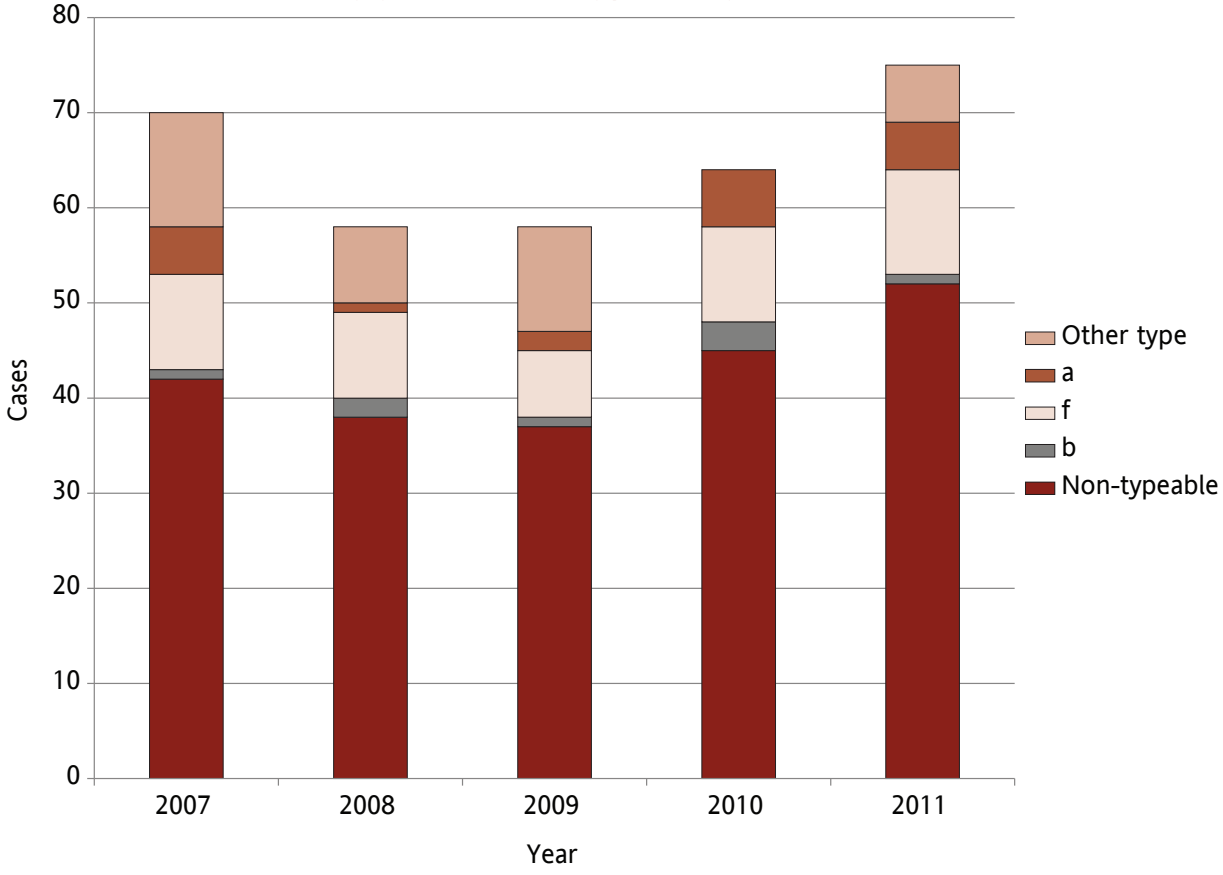

## *H. influenzae* infection by onset month: Oregon, 2011



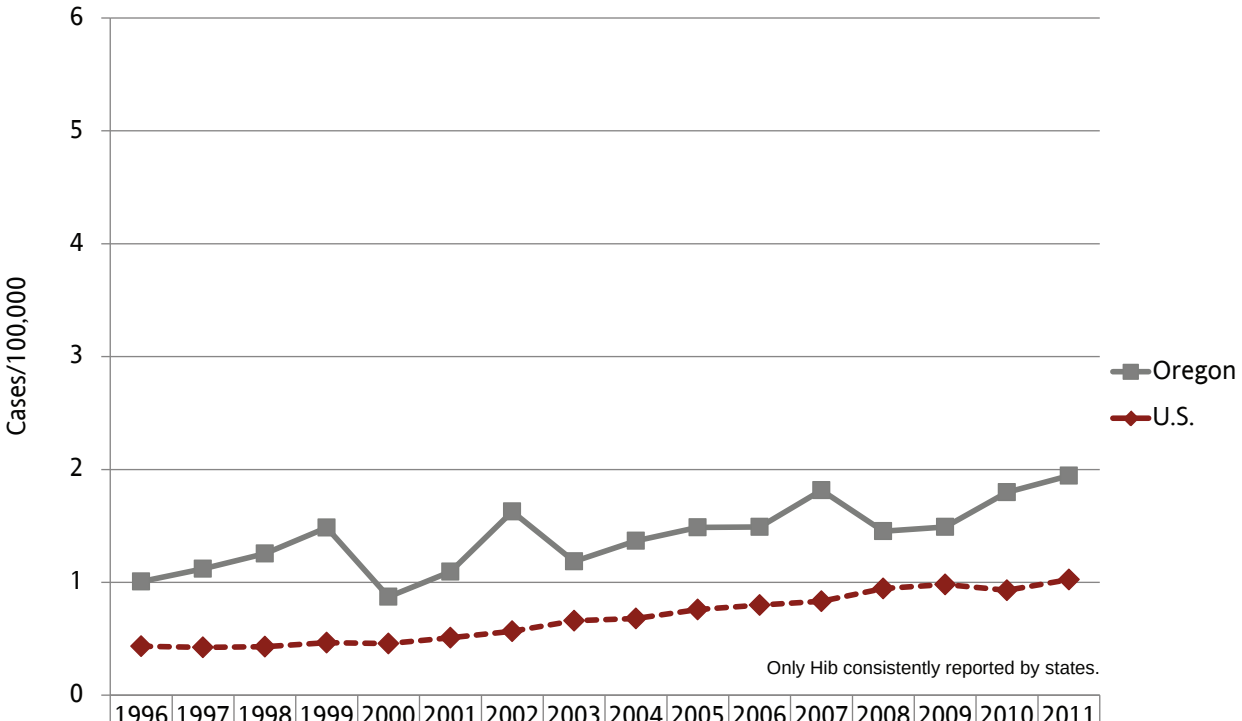
## Incidence of *H. influenzae* infection by age and sex: Oregon, 2011




## *H. influenzae* infection by year and serotype: Oregon, 2007–2011

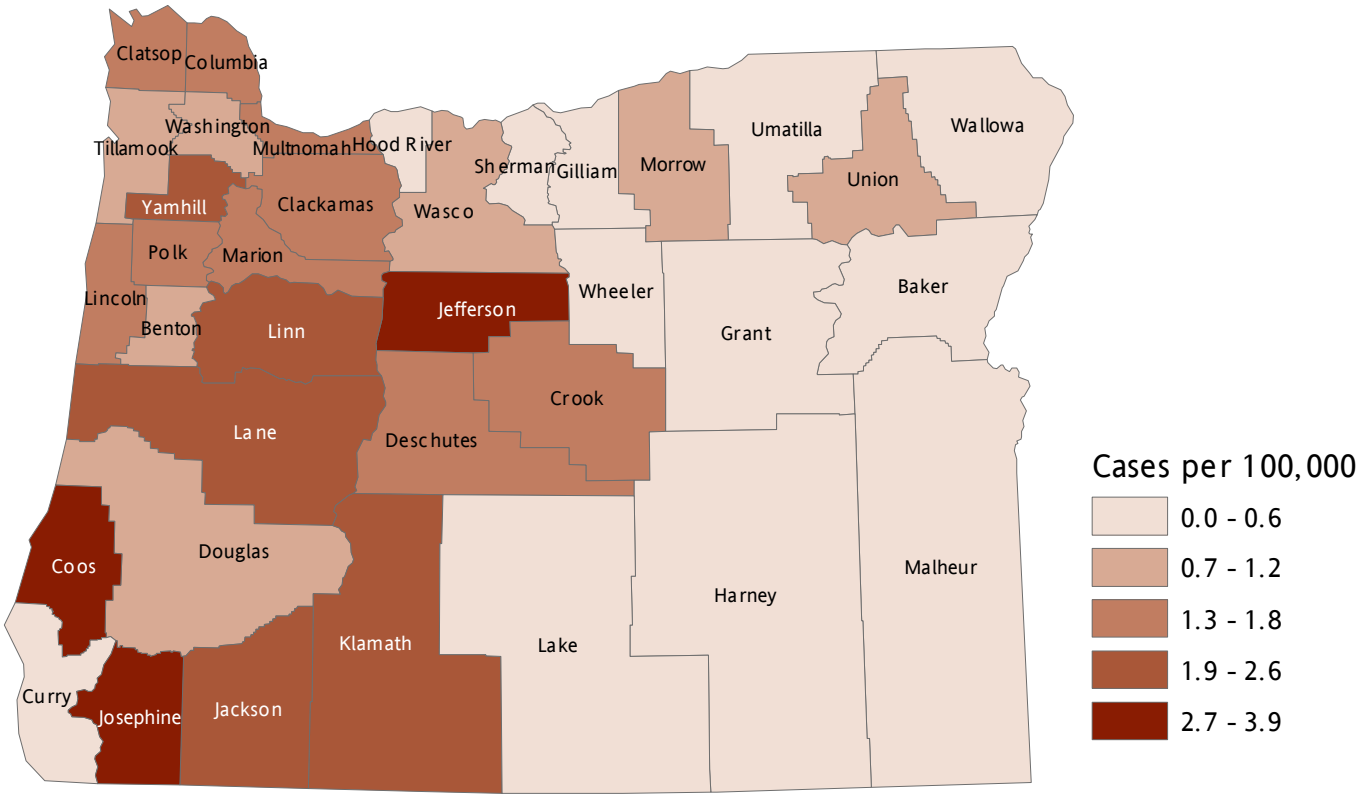


## Incidence of *H. influenzae* infection: Oregon vs. nationwide, 1996–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 1.0 | 1.1 | 1.3 | 1.5 | 0.9 | 1.1 | 1.6 | 1.2 | 1.4 | 1.5 | 1.5 | 1.8 | 1.5 | 1.5 | 1.8 | 1.9 |
| U.S. | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.9 | 1.0 | 0.9 | 1.0 |

## Incidence of *H. influenzae* infection by county of residence: Oregon, 2002–2011



## Acute hepatitis A

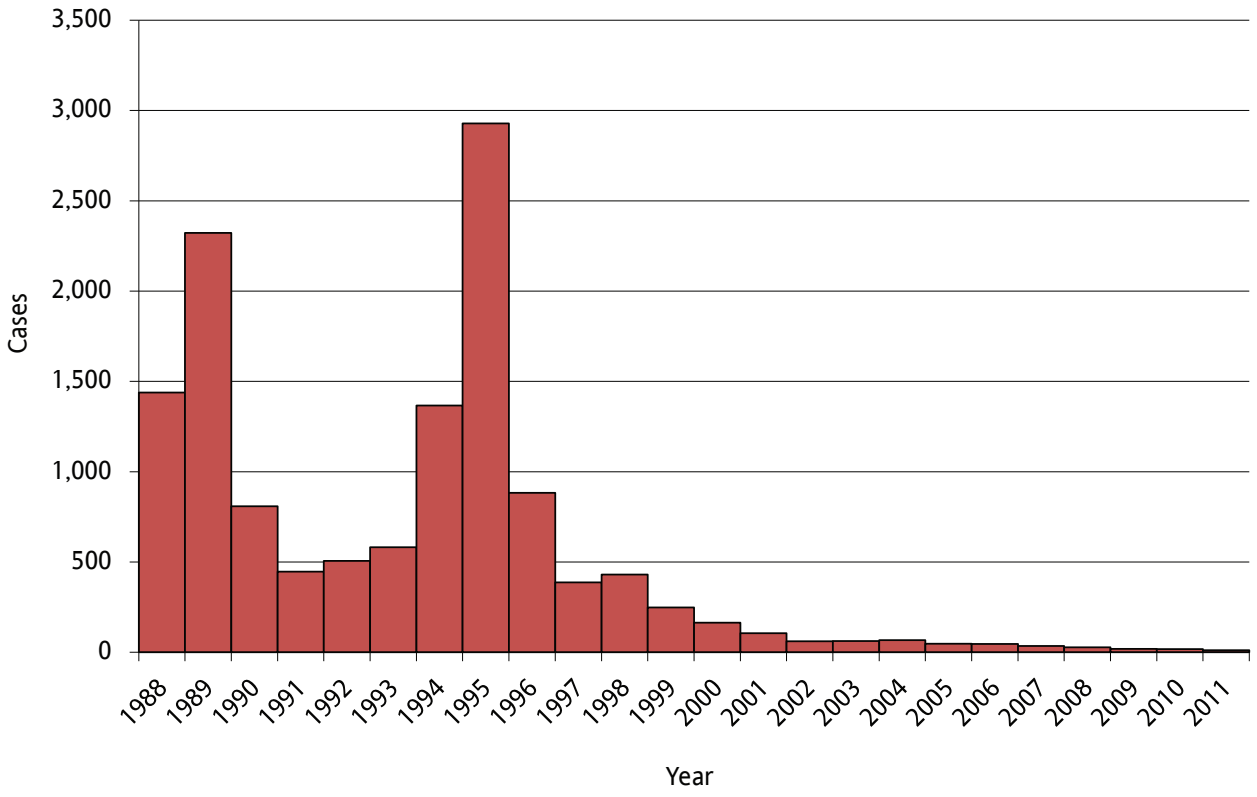
Hepatitis A is a liver disease caused by the hepatitis A virus, which infects humans via fecal-oral transmission. Historically, in Oregon, hepatitis A can occur in situations ranging from isolated cases of disease to statewide outbreaks. However, since the licensure of the hepatitis A vaccine in 1995–1996, rates of infection have declined nationally and in Oregon, one of the higher incidence states. Most cases in Oregon are sporadic and occur mainly in persons who travel outside the United States. Oregon has seen small clusters of hepatitis A infections among injection drug users and jail inmates. There were no outbreaks of hepatitis A in 2011. The last outbreak of hepatitis A in Oregon occurred in 2006.

Good personal hygiene and proper sanitation can help prevent hepatitis A. Vaccines are recommended for long-term prevention of hepatitis A in all Oregon children 1 year of age and older, as well as for adults in high-risk groups.

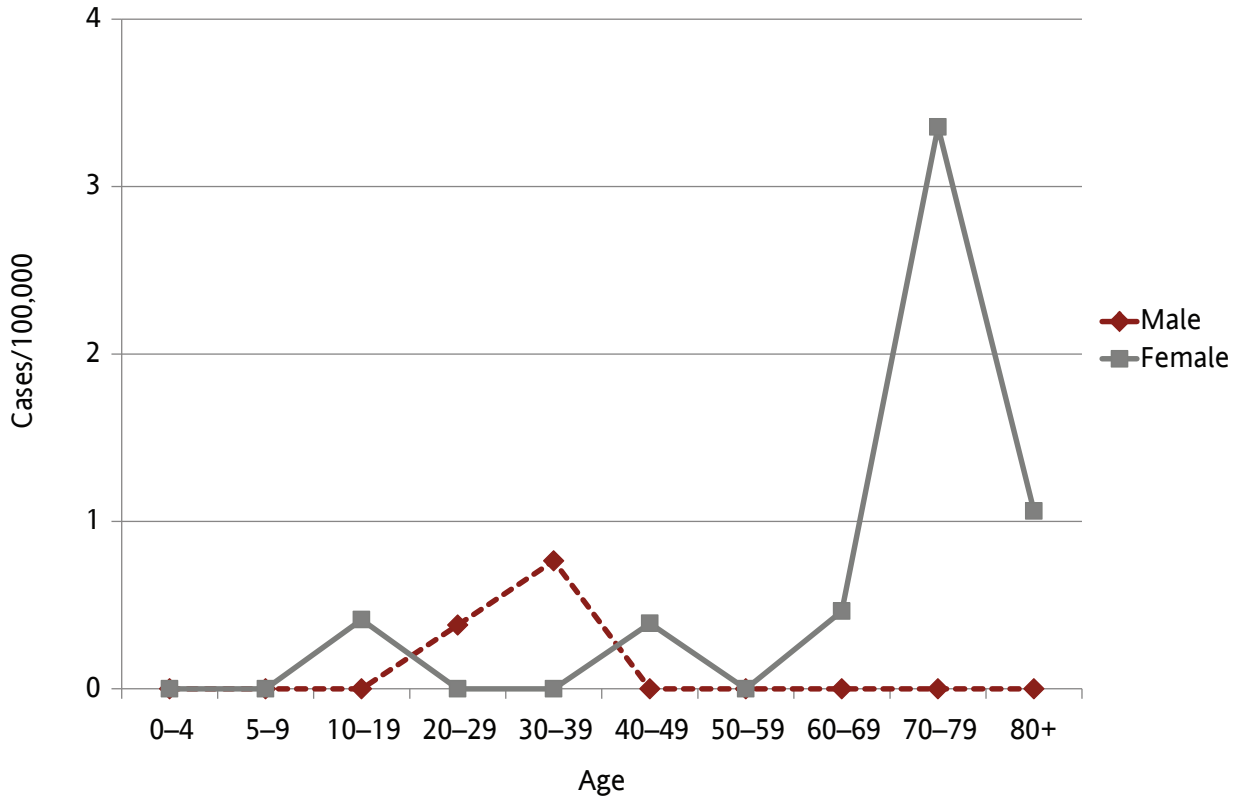
In 2007, Oregon adopted the CDC case definition; laboratory positive, asymptomatic infections are no longer reportable. Recent changes in post-exposure prophylaxis include vaccination instead of immunoglobulin for immune-competent contacts aged 1–40 years. For those under 12 months and over 40 years of age, or with immune-compromising conditions, immune globulin is still recommended.

In 2011, Oregon logged 11 cases of acute hepatitis A (a historic low). Five (46%) of the 11 cases in 2011 were acquired by venturing outside of Oregon, often to countries with high rates of hepatitis A, such as Mexico. Such persons placing themselves at elevated risk should receive a dose of hepatitis A vaccine as soon as travel is considered. Completion of the hepatitis A vaccination series (administered according to the licensed schedule) is recommended for long-term protection. Fifty-four percent of cases (n=6) had no identifiable risk factor for acquisition of hepatitis A infection. Ninety-one percent of cases were over 20 years of age.

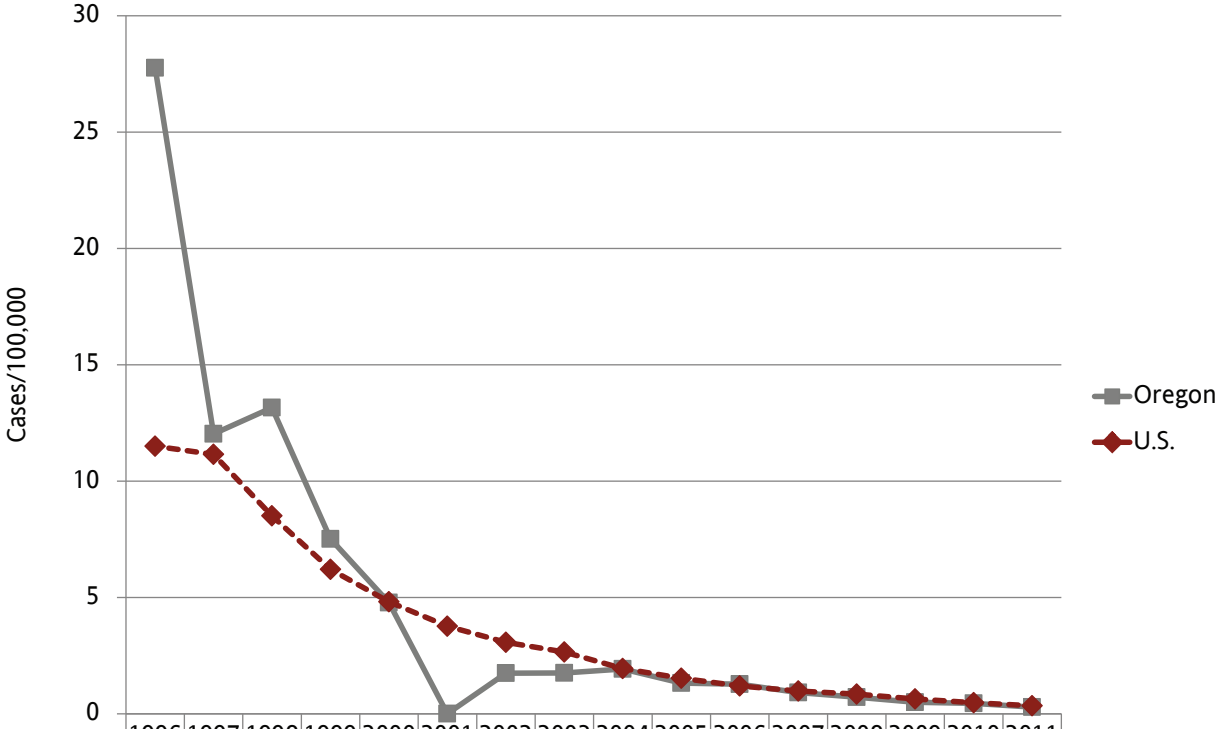
## Hepatitis A by year: Oregon, 1988–2011




## Incidence of hepatitis A by age and sex: Oregon, 2011

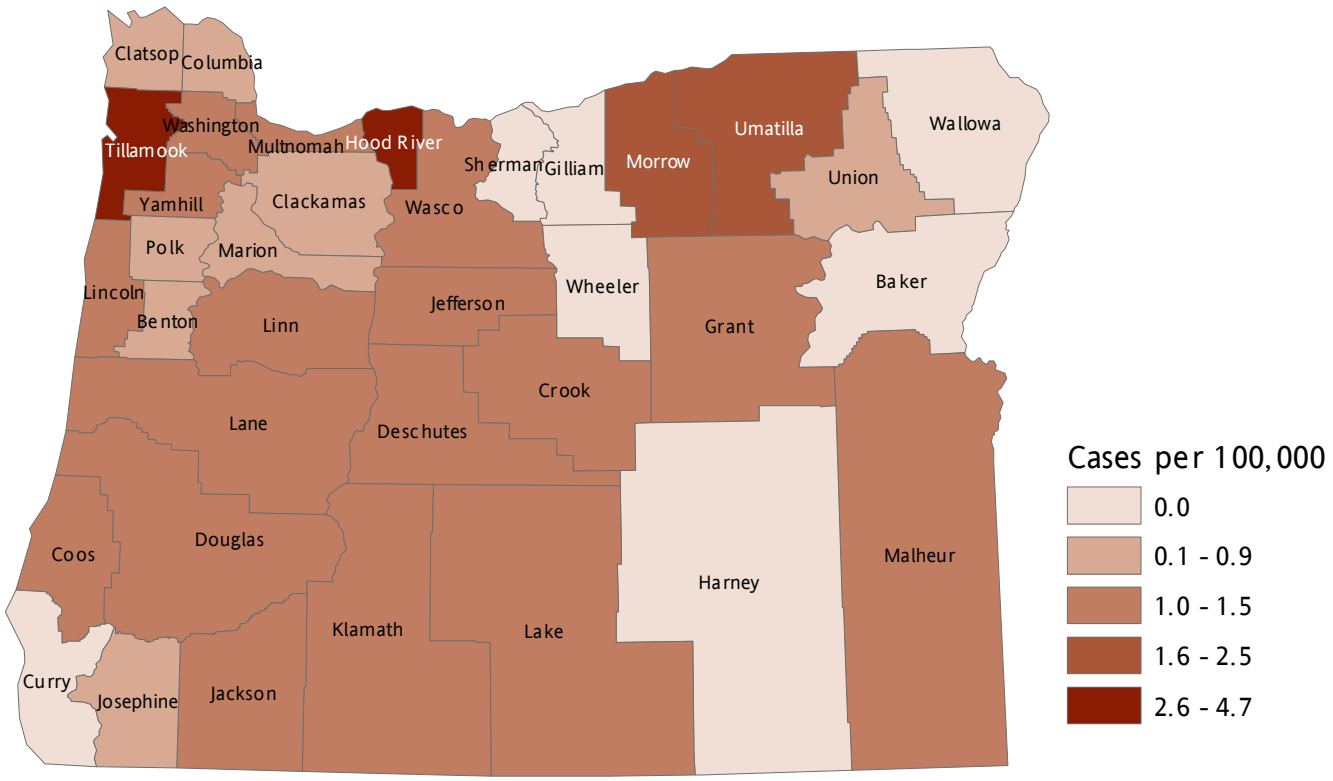


## Incidence of hepatitis A: Oregon vs. nationwide, 1996–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 27.8 | 12.0 | 13.2 | 7.5 | 4.8 | 0.0 | 1.7 | 1.8 | 1.9 | 1.3 | 1.3 | 0.9 | 0.7 | 0.5 | 0.4 | 0.3 |
| U.S. | 11.5 | 11.2 | 8.5 | 6.2 | 4.8 | 3.8 | 3.1 | 2.6 | 1.9 | 1.5 | 1.2 | 1.0 | 0.8 | 0.6 | 0.5 | 0.3 |

## Incidence of hepatitis A by county of residence: Oregon, 2002–2011



## Acute hepatitis B

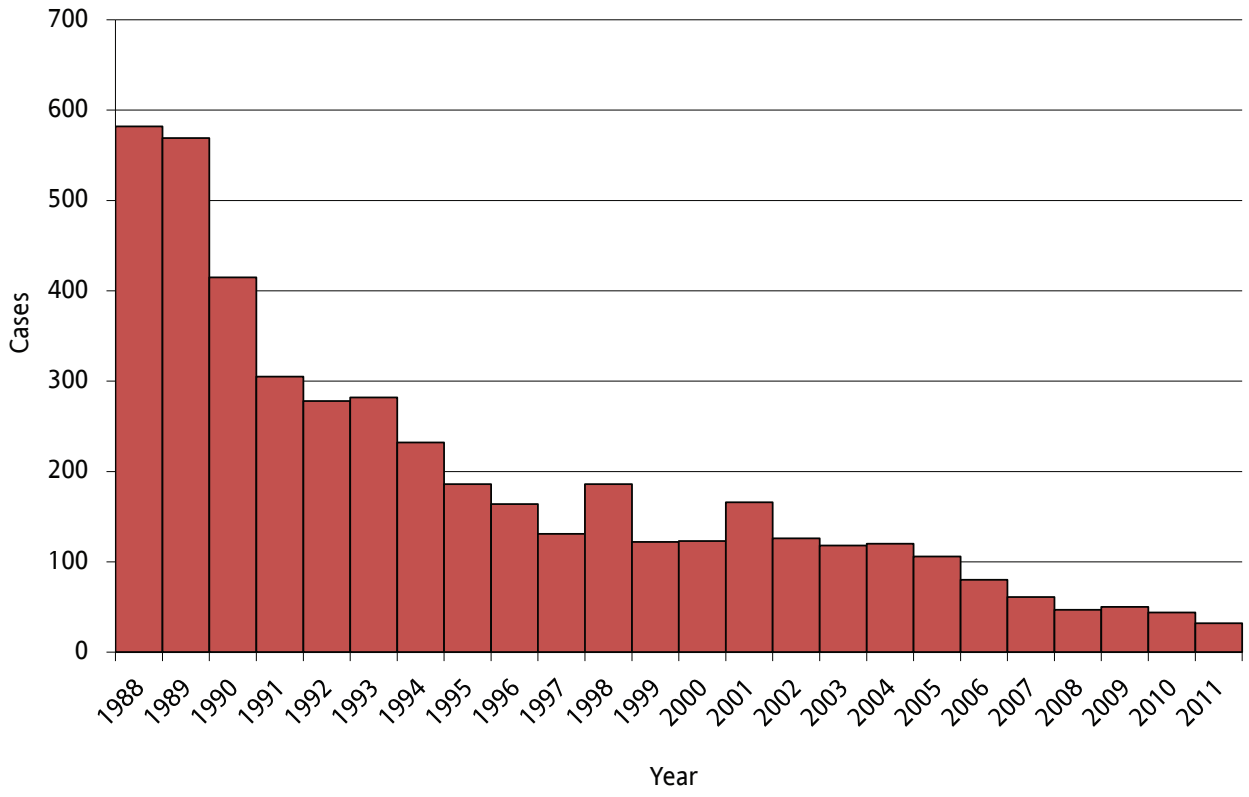
Hepatitis B is a vaccine-preventable viral disease of the liver that occurs when the virus of an infected person passes (through blood, semen or saliva) into the blood stream of a non-immune person. Percutaneous or permucosal exposures take place when hypodermic needles are shared; when blood splashes into an eye; during sex; by biting; from lapses in hygiene involving glucometer and other fingerstick devices in diabetics; from breaches in infection control in health care settings; and when a baby is born whose mother is a hepatitis B carrier.

Acute hepatitis B virus infection (diagnosed by the presence in serum of IgM antibody to the hepatitis B core antigen [IgM anti-HBc]) usually, but not always, causes jaundice. Some infections are mild, even asymptomatic, and may go undetected. Hepatitis B has been vaccine-preventable since 1982 and, to promote universal vaccination and hence protection, was added to the recommended childhood immunization schedule in 1992 with the series starting at birth.

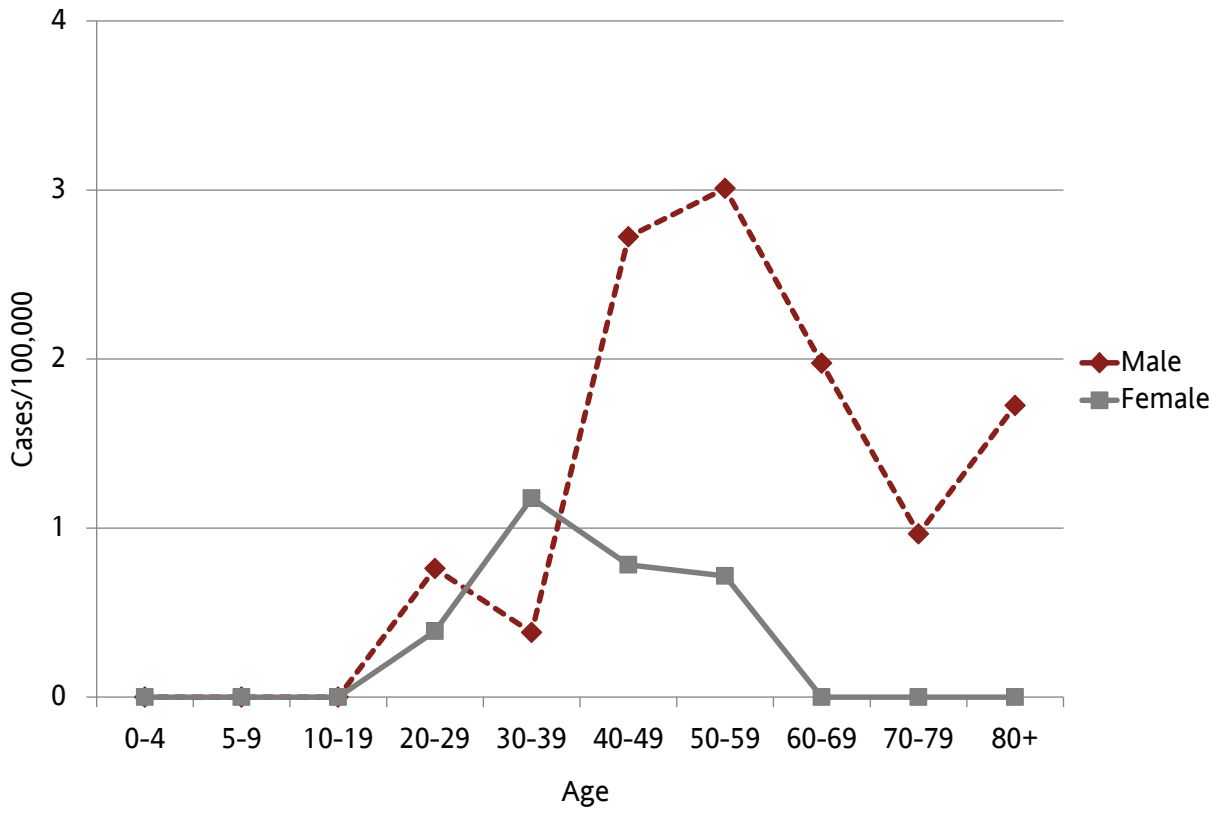
Acute hepatitis B continues to decline in Oregon — a decline that started here after the hepatitis B vaccine was licensed in 1982.

Local health departments investigated and reported 32 acute cases in 2011. Seventy-five percent of the cases were male. The most commonly reported risk factors include injection drug use (IDU) and sexual risk factors (history of multiple sexual partners; men who have sex with men [MSM]). No risk factor was identified for 32% of cases. There were no outbreaks of hepatitis B in 2011.

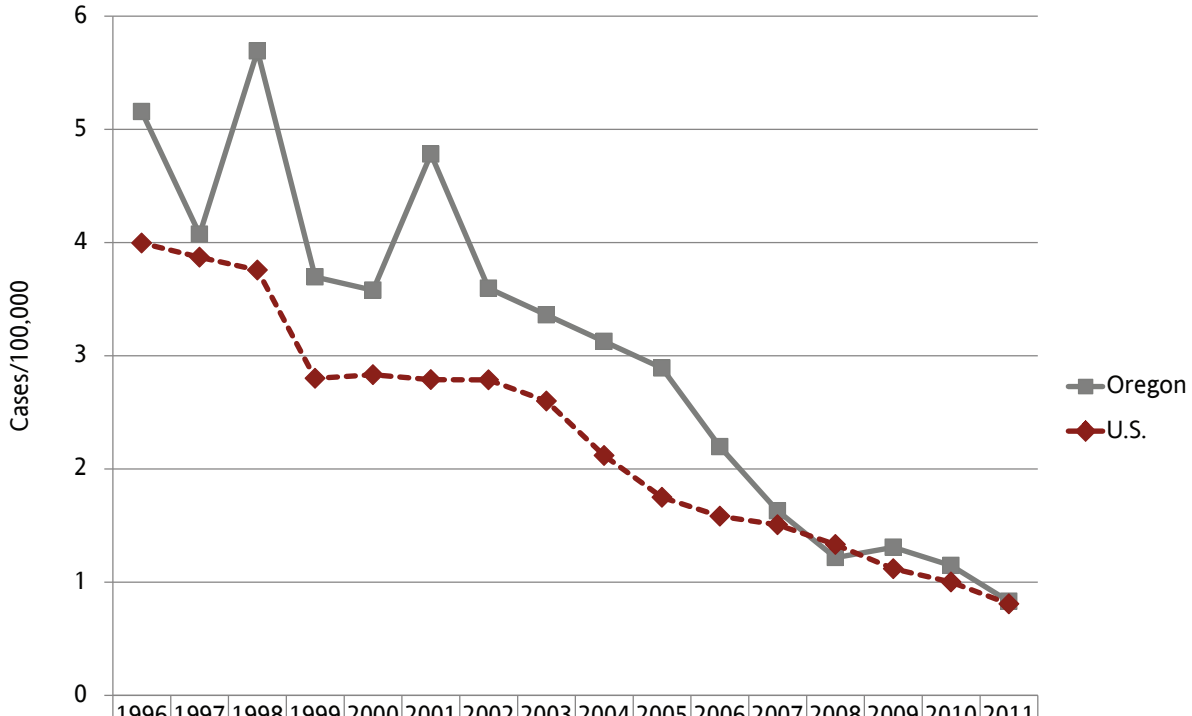
## Acute hepatitis B by year: Oregon, 1988–2011




## Incidence of acute hepatitis B by age and sex: Oregon, 2011

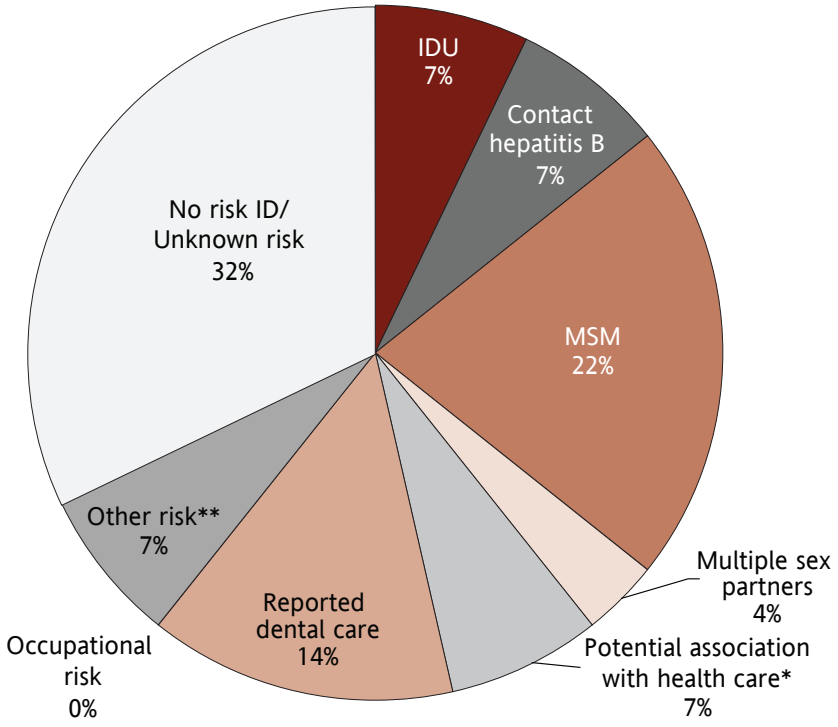


## Incidence of acute hepatitis B: Oregon vs. nationwide, 1996-2011



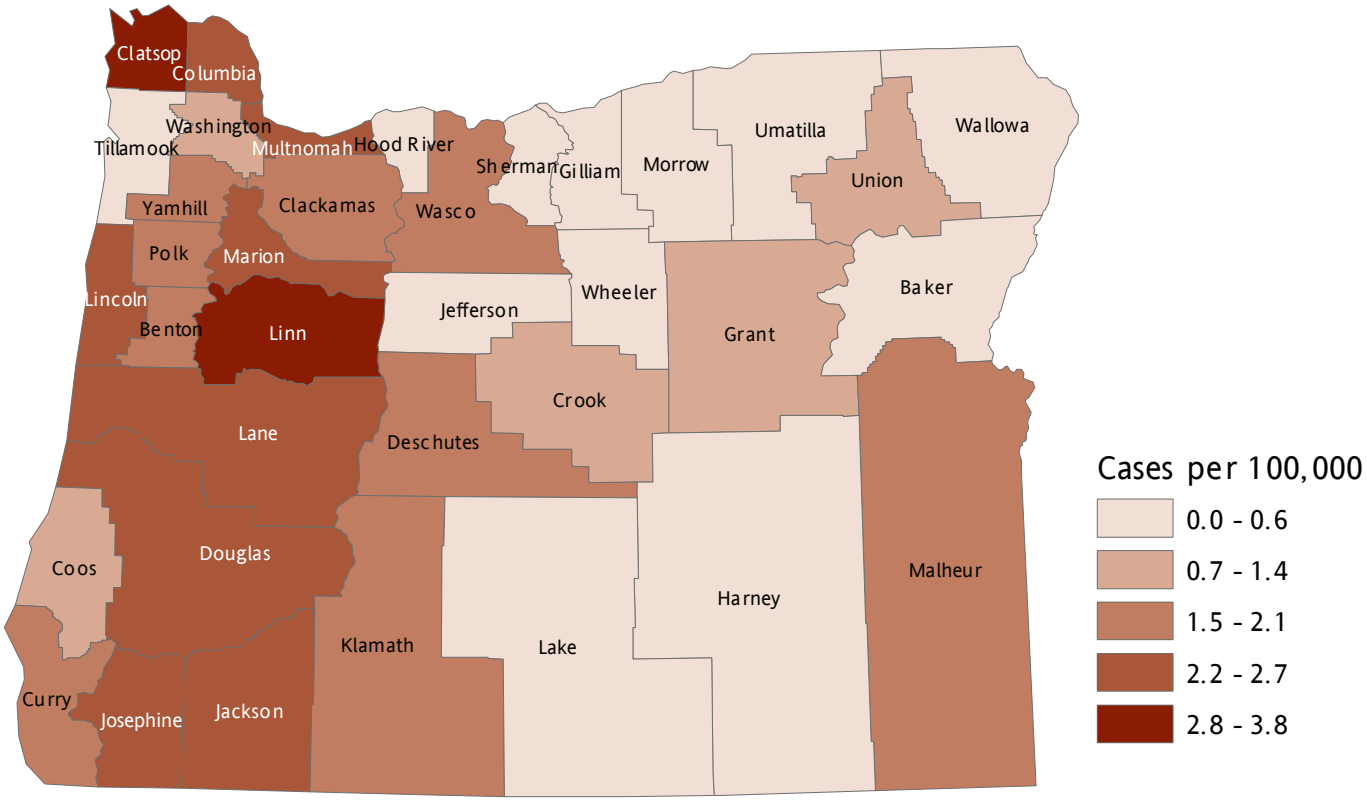

| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 5.2 | 4.1 | 5.7 | 3.7 | 3.6 | 4.8 | 3.6 | 3.4 | 3.1 | 2.9 | 2.2 | 1.6 | 1.2 | 1.3 | 1.1 | 0.8 |
| U.S. | 4.0 | 3.9 | 3.8 | 2.8 | 2.8 | 2.8 | 2.8 | 2.6 | 2.1 | 1.7 | 1.6 | 1.5 | 1.3 | 1.1 | 1.0 | 0.8 |

## Reported risk factors for acute hepatitis B among interviewed cases, Oregon, 2011




*Infusions, transfusions, dialysis or surgery
**Other risk: Steet drugs, tattoo, piercing, accidental needlestick and other blood exposure

## Incidence of acute hepatitis B by county of residence: Oregon, 2002–2011



## Chronic hepatitis B

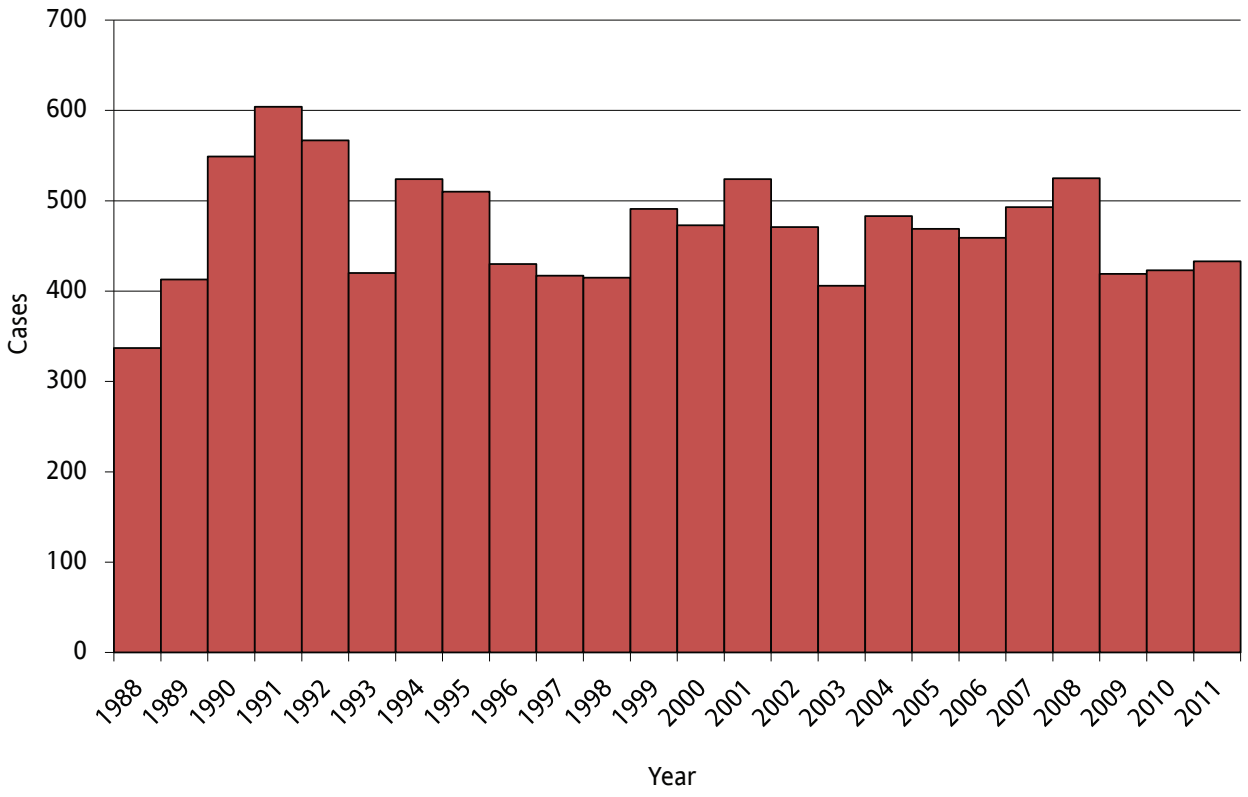
Persons with chronic hepatitis B are known as "chronic carriers" — a state of infection defined by the persistence of hepatitis B surface antigen (HBsAg) in the blood for more than six months. The likelihood of becoming a chronic carrier is affected by the age at infection. Fewer than 6% of acutely infected adults in the United States become carriers, compared to 25% (with HBeAg-negative moms) to 90% (with HBeAg-positive moms) of children infected in early childhood or during birth. Perinatal infection can be prevented by prompt administration of hepatitis B immune globulin and initiation of the three-dose hepatitis B vaccination series. This perinatal intervention is widely practiced in the United States — all states have federal funding for perinatal hepatitis B prevention programs — but not in other parts of the world, particularly Asia and sub-Saharan Africa, where the prevalence of chronic hepatitis B is higher to begin with. Forty-six percent of 2011 reports were from foreign-born individuals. Chronic carriers are at greater risk of developing life-threatening diseases (e.g., chronic active hepatitis, cirrhosis or liver cancer) decades later. Carriers will sustain transmission of hepatitis B in the United States until vaccine-induced immunity is nearly universal.

Recommendations and strategies to prevent new cases include the following: routinely vaccinating all infants at birth; screening all pregnant women for hepatitis B; administering hepatitis B immune globulin (HBIG) in addition to hepatitis B vaccine to infants born to HBsAg-positive mothers; and ensuring that all infants complete the hepatitis B vaccine series.

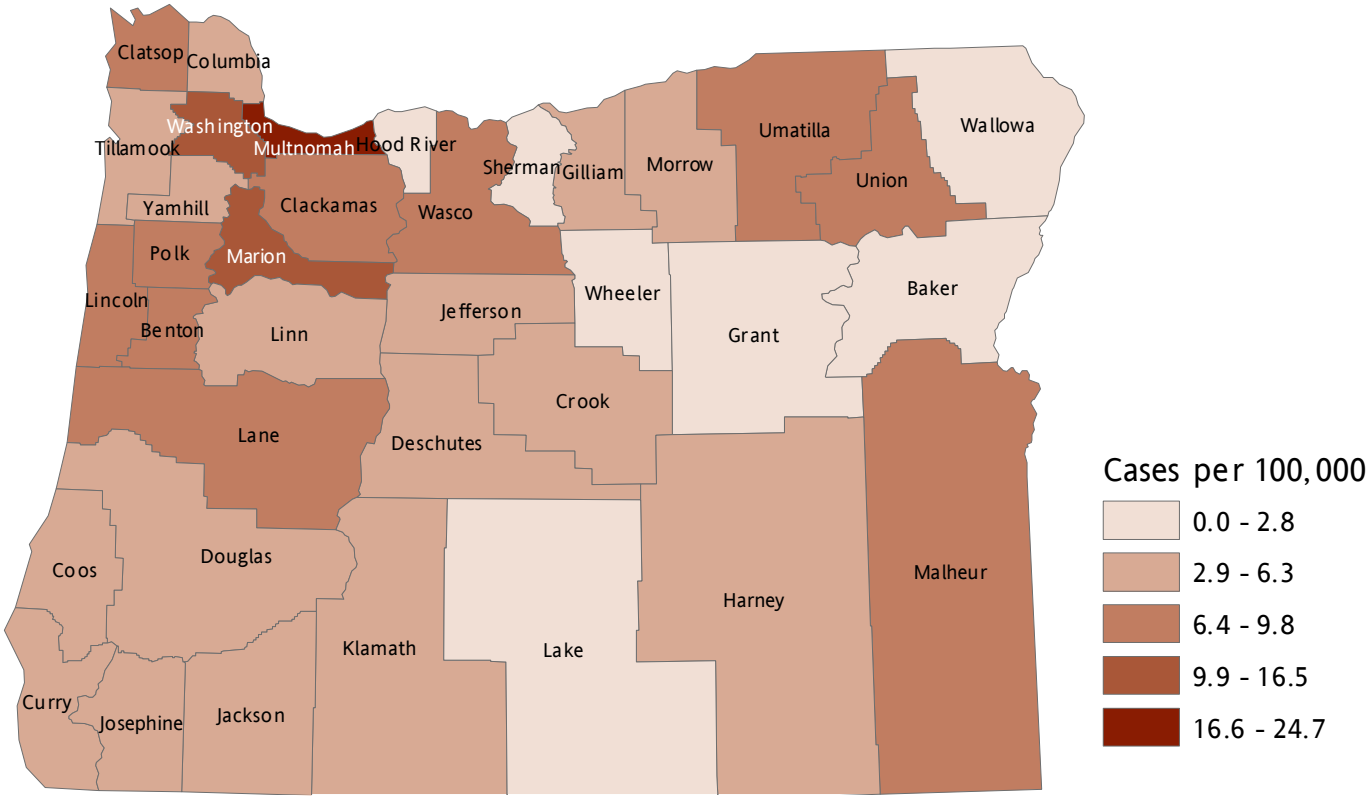
In 2011, there were 451 newly reported carriers, 41% of whom were women.

Women, however, are diagnosed earlier than men, perhaps due to prenatal screening. In 2011, two children <5 years old were reported as chronic carriers. One child was born in China and one in Cambodia; both countries have a high prevalence of chronic hepatitis B infections. Chronic carriers are not reportable in many states, so a table comparing Oregon to the rest of the United States is not given.

## Chronic hepatitis B by year: Oregon, 1988–2011




## Incidence of chronic hepatitis B by county of residence: Oregon 2001-2011



## Hepatitis C

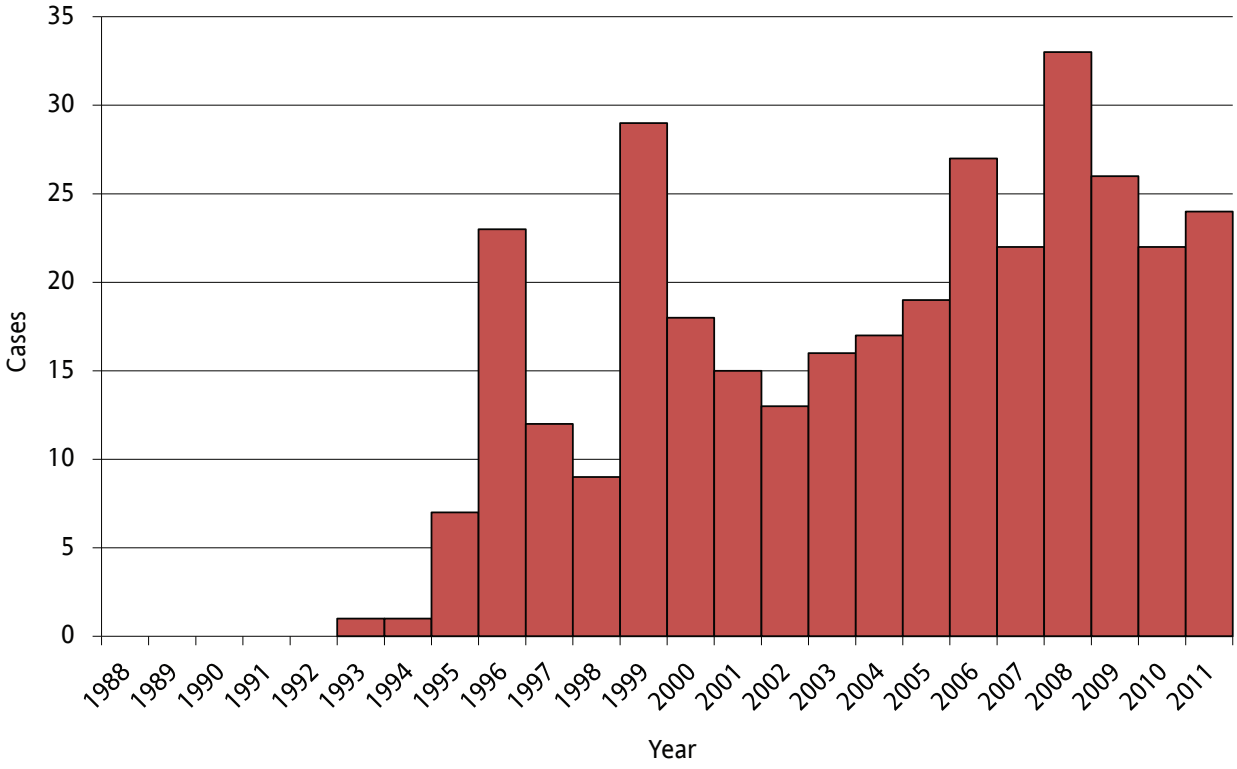
Infection with hepatitis C virus (HCV) causes both acute and chronic hepatitis C disease. HCV is found in the blood of persons who have the disease. The most common signs and symptoms of acute hepatitis C include jaundice, fatigue, dark urine, abdominal pain, loss of appetite and nausea. However, 80% of persons are asymptomatic. Acute hepatitis C cases are underreported due to the fact that most persons are asymptomatic and that laboratories cannot distinguish between acute and chronic HCV infection. Hepatitis C can lead to liver damage and sometimes death due to cirrhosis and liver cancer. In the United States, an estimated 2.7–3.9 million people are infected with hepatitis C virus. Chronic liver disease develops in up to 70% of chronically infected persons. Hepatitis C infection is the leading indication for liver transplant. Deaths from hepatitis C-related chronic liver disease have been increasing since 1999; in 2007, more than 15,000 people in the United States died as a result of hepatitis C. There is no vaccine for hepatitis C.

Hepatitis C is spread from one person to another primarily by direct contact with human blood. Most infections are due to illegal injection drug use. The virus can also be transmitted through sexual contact and from infected mothers to their infants at the time of birth. The risk for perinatal HCV transmission is approximately 4%. If the mother is coinfected with HIV, the risk for perinatal infection increases to approximately 19%. Since the adoption of routine blood donor screening in 1992, transfusion-associated cases now occur less than 1 per 2 million units of blood transfused. Cases can occur in health care settings, most commonly related to improper reuse of syringes or multidose vials.

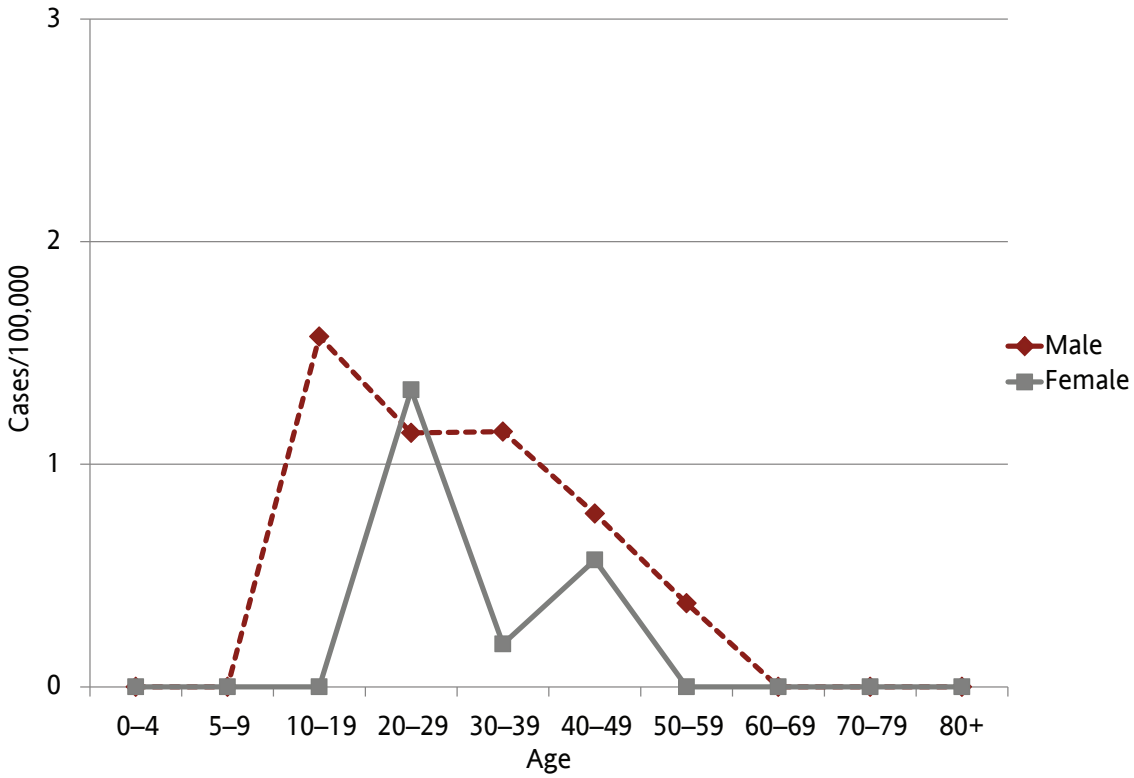
## Acute hepatitis C

On average, from 2001–2011, there were 21 acute hepatitis C cases reported per year in Oregon. In 2011, 23 cases were reported. Seventy percent of the cases were less than 40 years of age, and 48% were female. Injection drug use remains the predominant risk factor reported by cases (65%).

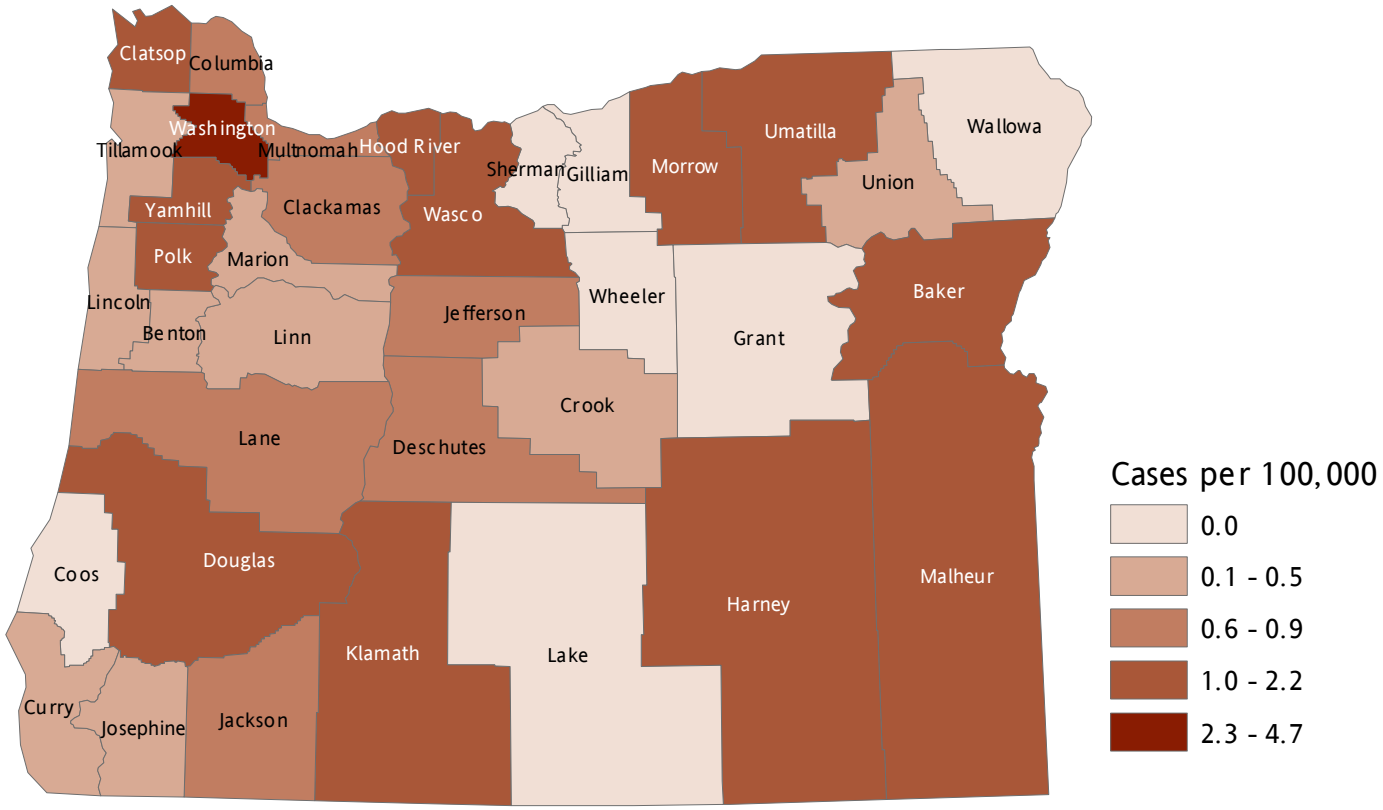
### Acute hepatitis C by year: Oregon, 1988–2011



## Acute hepatitis C by age and sex: Oregon, 2011



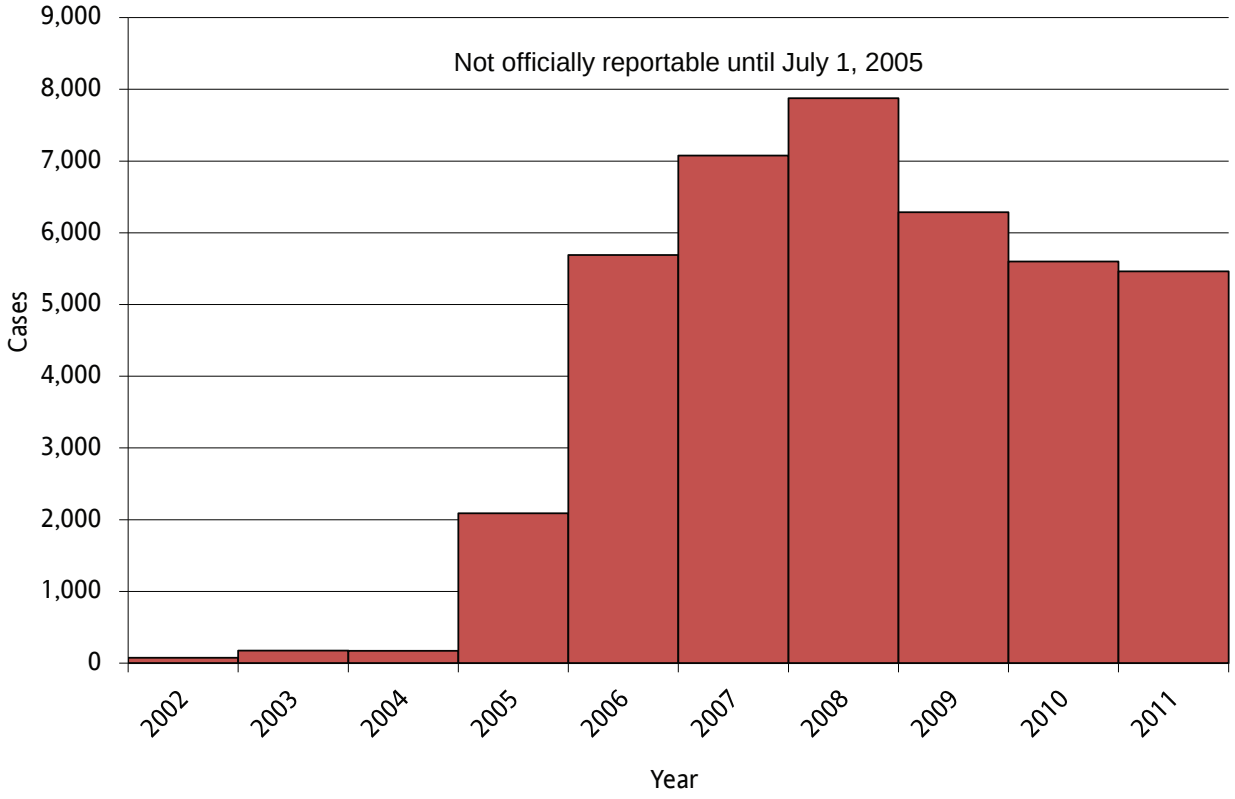

## Incidence of acute hepatitis C by county of residence: Oregon, 2002–2011



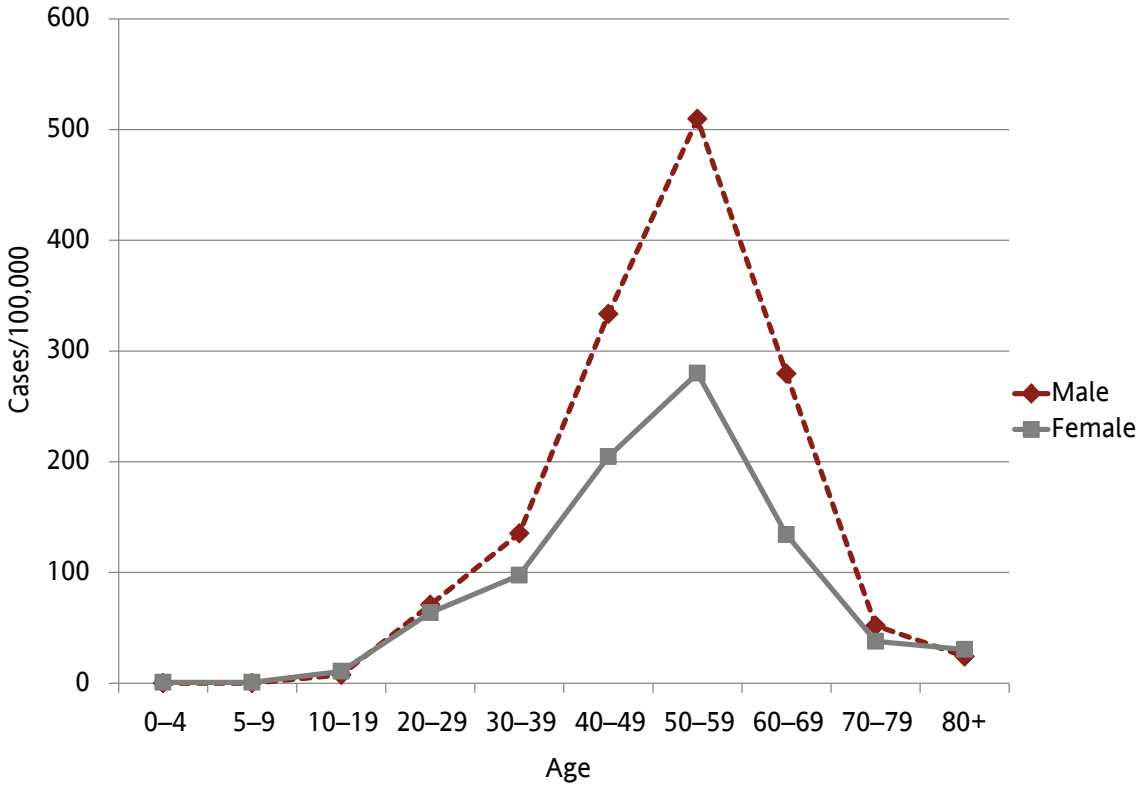
## Chronic hepatitis C

Chronic hepatitis C became reportable in Oregon as of July 1, 2005. In 2011, 5,576 chronic hepatitis C cases were reported, down slightly from 5,871 reported in 2010. These numbers are likely an underestimate of the true incidence because most infections are asymptomatic and therefore are not diagnosed or reported to public health. Infection in males (63% of 2011 Oregon cases) is more common than in females. The highest prevalence of HCV infection is among persons born between 1945 and 1965. CDC estimates that this age group comprises 75% of chronic hepatitis C cases in the United States; among Oregon cases, 67% belong to this age group.

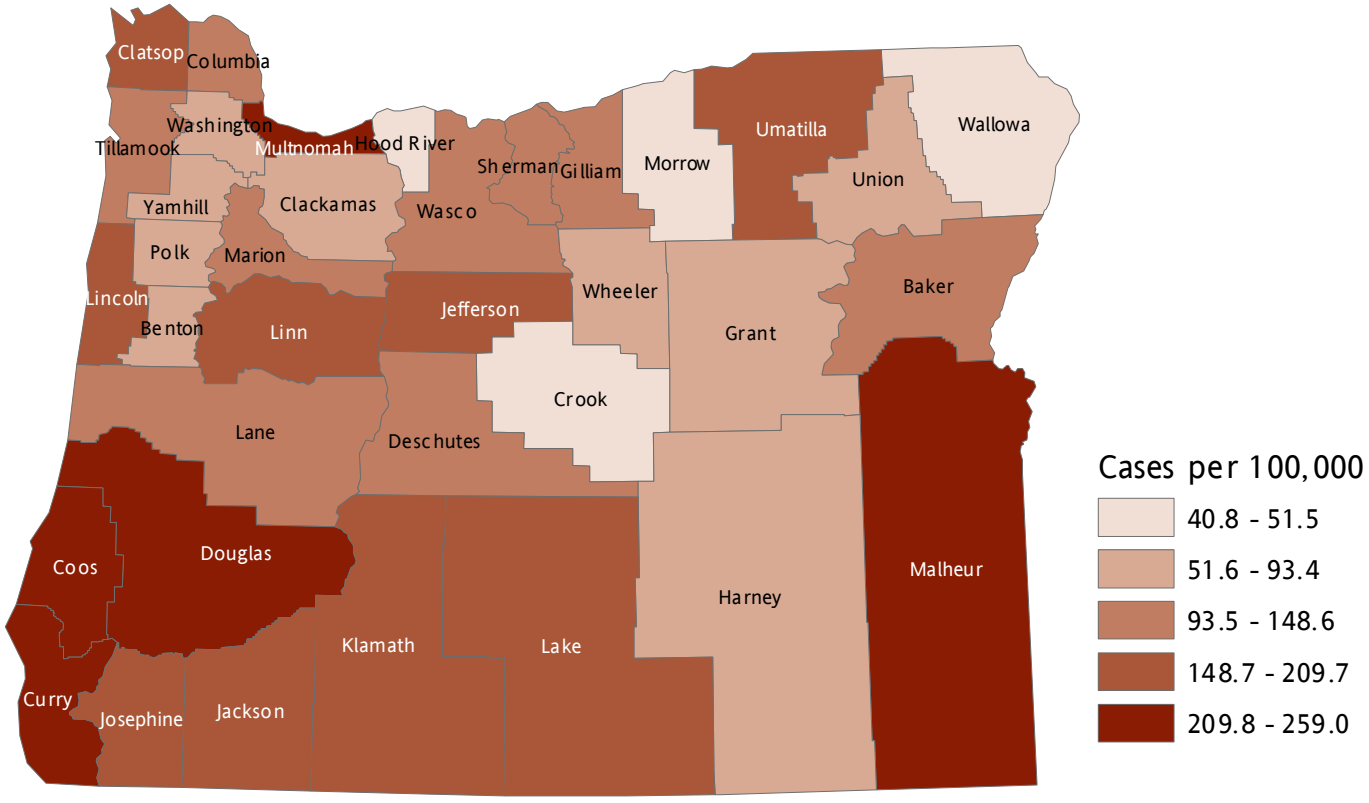
### Chronic hepatitis C by year: Oregon, 2002–2011



## Chronic hepatitis C by age and sex: Oregon, 2011




## Incidence of chronic hepatitis C by county of residence: Oregon, 2005–2011



## Legionellosis

Legionellosis is usually an acute respiratory tract infection that begins two to 14 days after exposure to *Legionella* spp. Signs of the disease can include a high fever, chills and cough, in addition to head and muscle aches. Since symptoms are similar to those seen in other forms of pneumonia, the diagnosis is rarely obvious and can be difficult to make. Available confirmatory diagnostic tests include urine antigen detection, direct fluorescent antibody staining, and culture.

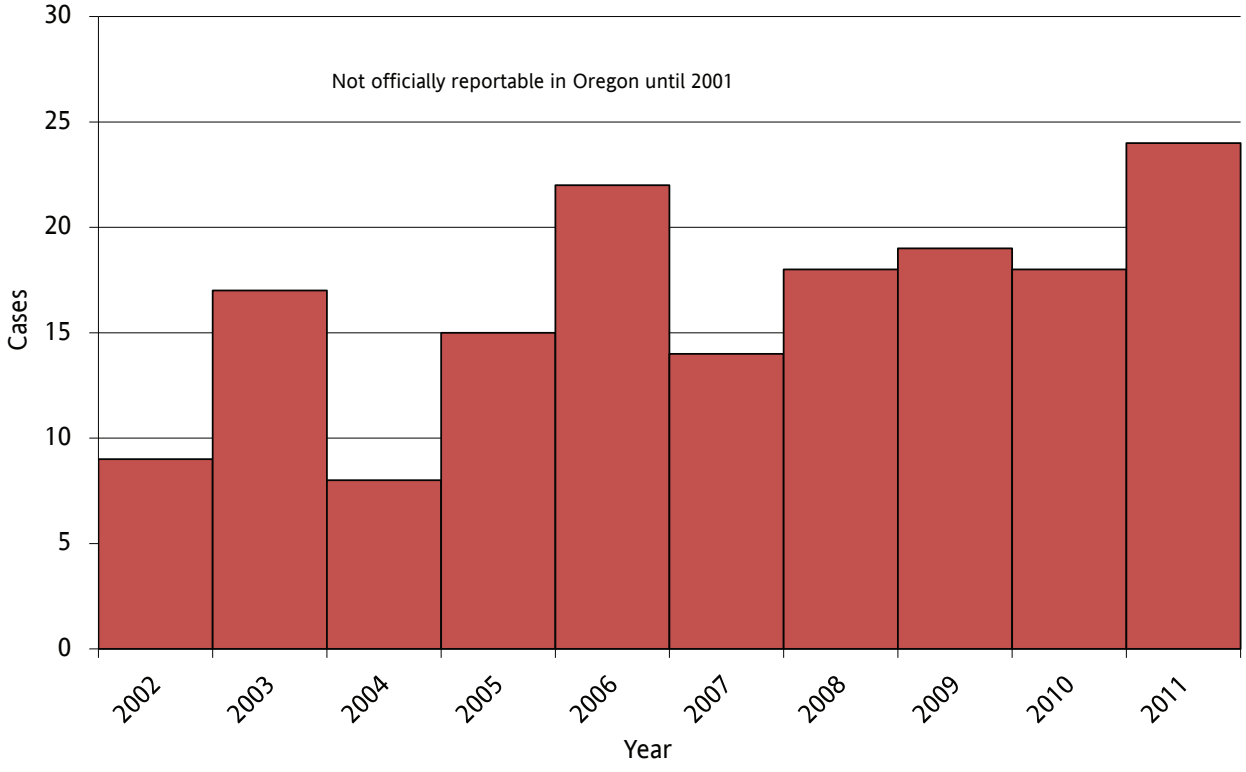
"Pontiac fever," a milder illness associated with *Legionella* bacteria, is characterized by fever and myalgias without pneumonia. It typically occurs a few hours to two days after exposure.

*Legionella* bacteria are found naturally in the environment, usually in water, and grow best in warm conditions such as hot tubs, cooling towers, hot water tanks, large plumbing systems, or the air-conditioning systems of large buildings. Person-to-person transmission does not occur.

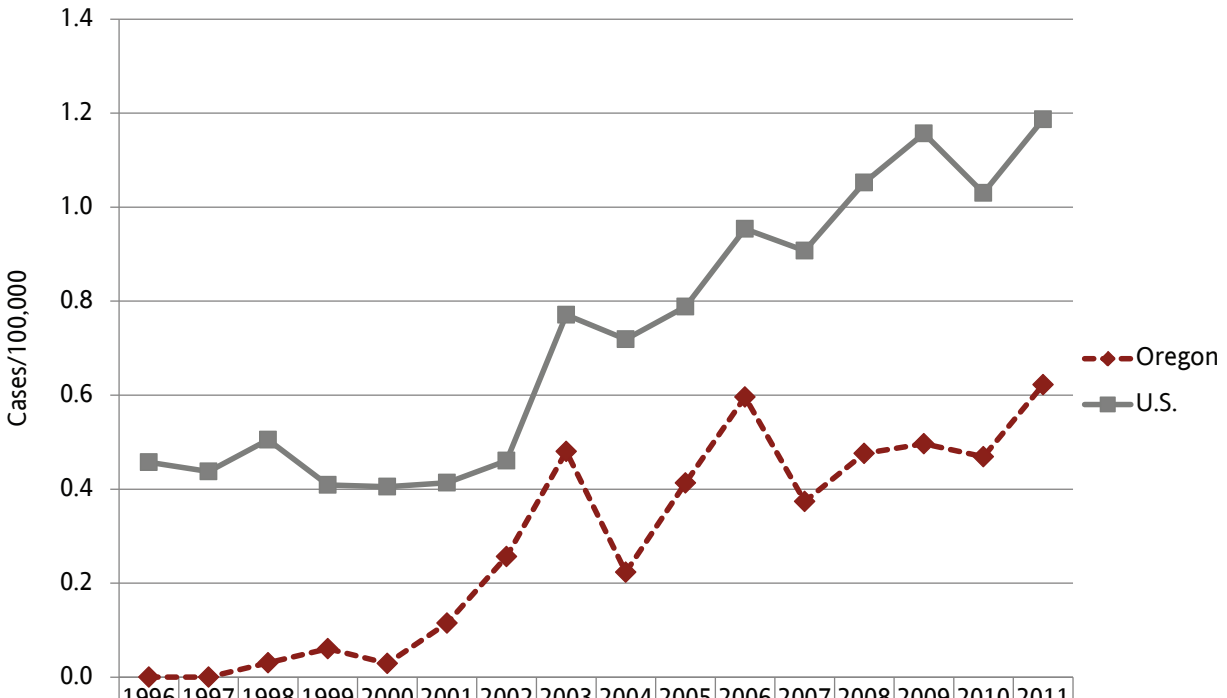
Risks for infection include older age, smoking, chronic lung disease (like emphysema), renal insufficiency, diabetes and immune deficiency. Death occurs in 10% to 15% of cases; a substantially higher proportion of fatal cases occur during nosocomial outbreaks.

Legionellosis became officially reportable in Oregon in 2001. In 2011, 24 cases of legionellosis were reported among Oregonians, 25% higher than the number of cases reported in 2010 (n=18). All 24 cases reported in 2011 were hospitalized. There were two deaths.

### Legionellosis by year: Oregon, 2002–2011

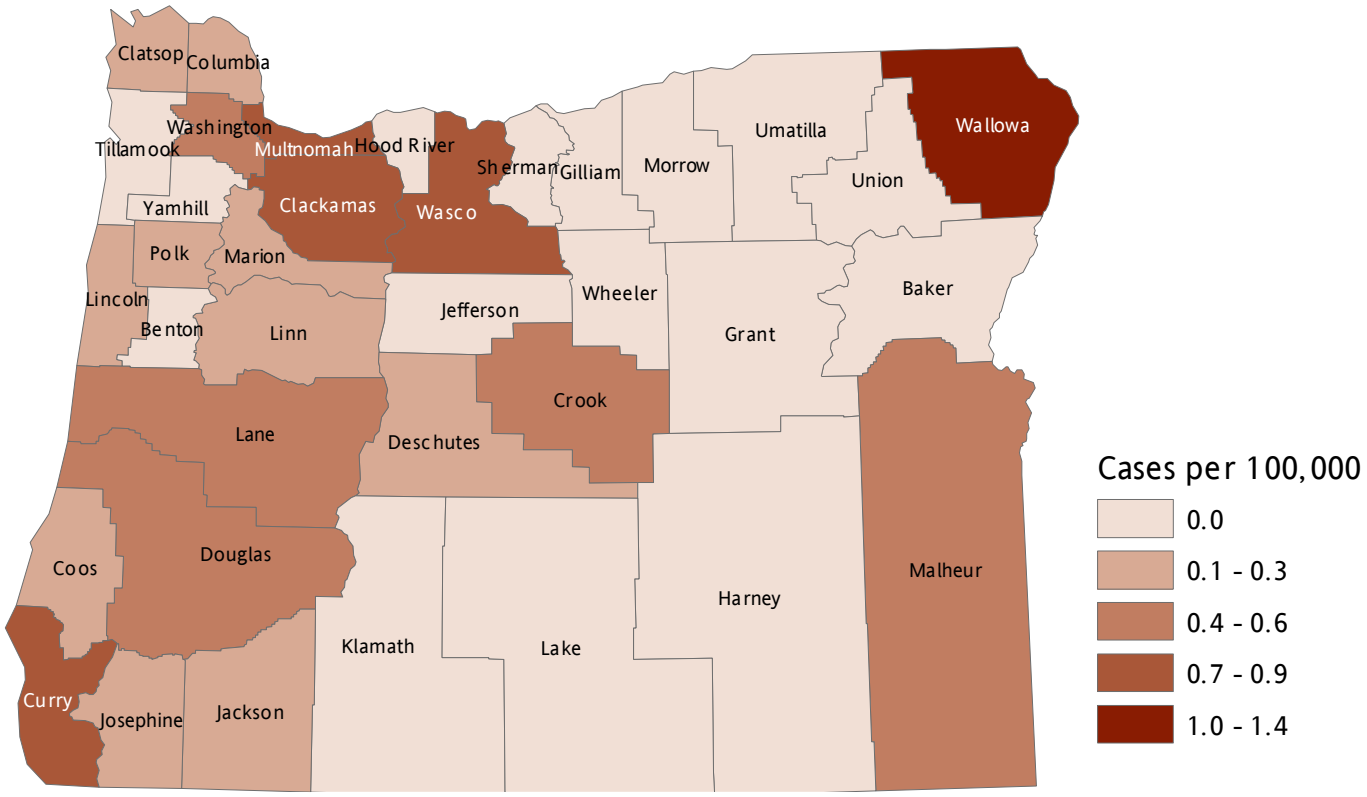


## Incidence of legionellosis: Oregon vs. nationwide, 2001–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.1 | 0.3 | 0.5 | 0.2 | 0.4 | 0.6 | 0.4 | 0.5 | 0.5 | 0.5 | 0.6 |
| U.S. | 0.5 | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.5 | 0.8 | 0.7 | 0.8 | 1.0 | 0.9 | 1.1 | 1.2 | 1.0 | 1.2 |

## Incidence of legionellosis by county of residence: Oregon, 2001–2011



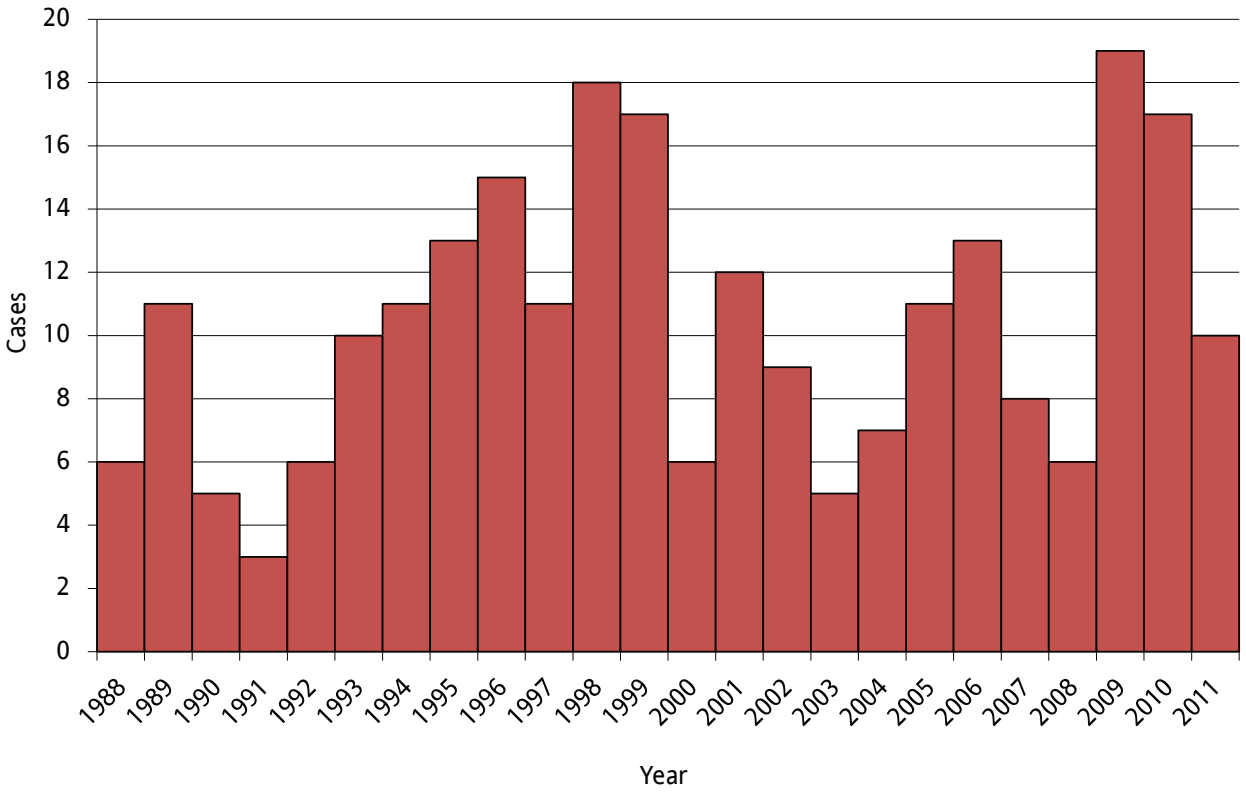
## Listeriosis

Listeriosis is a bacterial infection that may present as influenza-like illness with high fever, headache and myalgias; as a gastrointestinal illness; or as an invasive disease with sepsis or meningitis. In pregnant women, listeriosis may cause miscarriages or stillbirths. The case fatality rate of invasive listeriosis is as high as 30% in infants infected prenatally and in non-pregnant adults.

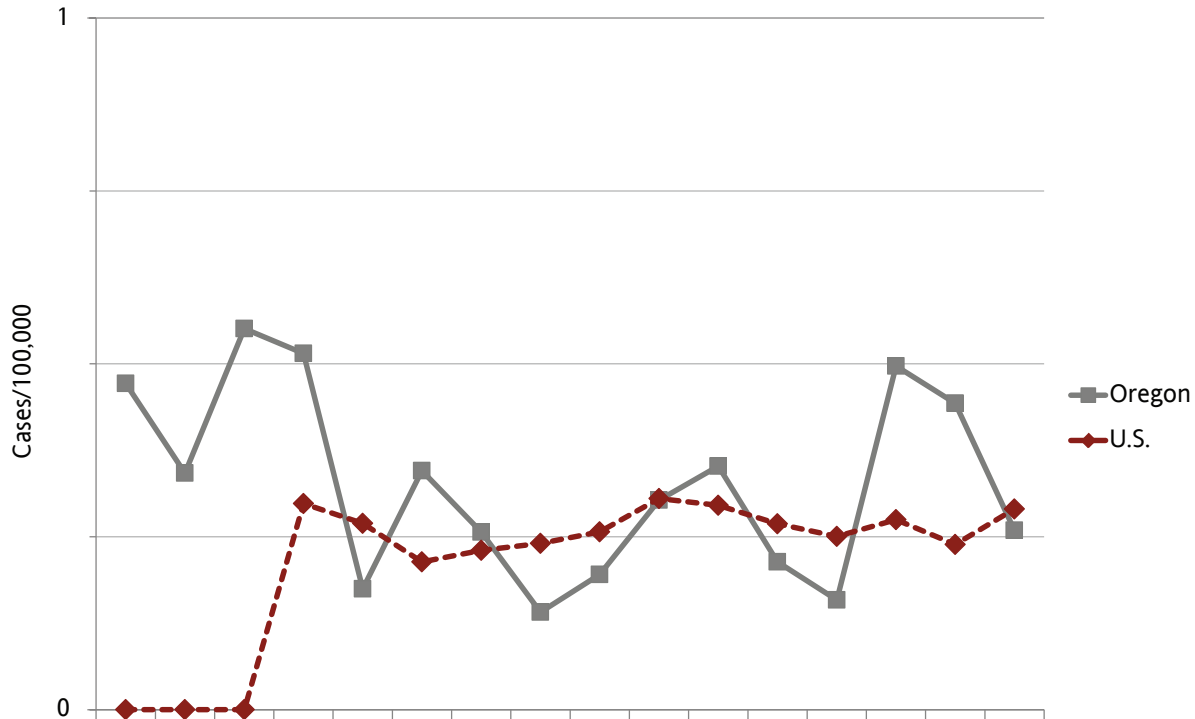
Most cases of listeriosis are sporadic rather than epidemic. However, several large outbreaks have been associated with consumption of contaminated foods. It is important to track the incidence of this disease to identify such outbreaks, as well as to identify high-risk groups. The rate is higher among pregnant women, newborns, the elderly and immunocompromised persons. Cooking food properly is the most important means of prevention. When listerosis is diagnosed, treatment with antibiotics should be instituted promptly.

In 2011 there were 10 cases with three deaths (30%). There were no pregnancy-associated cases.

### Listeriosis by year: Oregon, 1988–2011

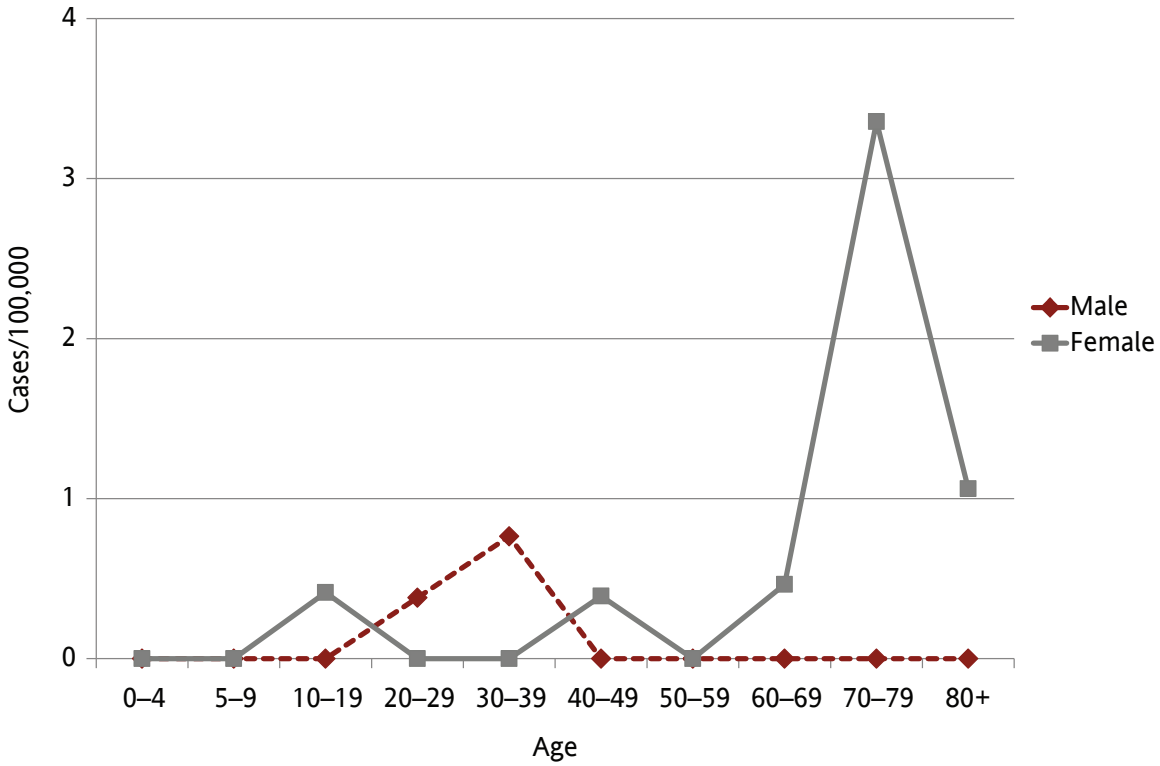


## Incidence of listeriosis: Oregon vs. nationwide, 1996–2011

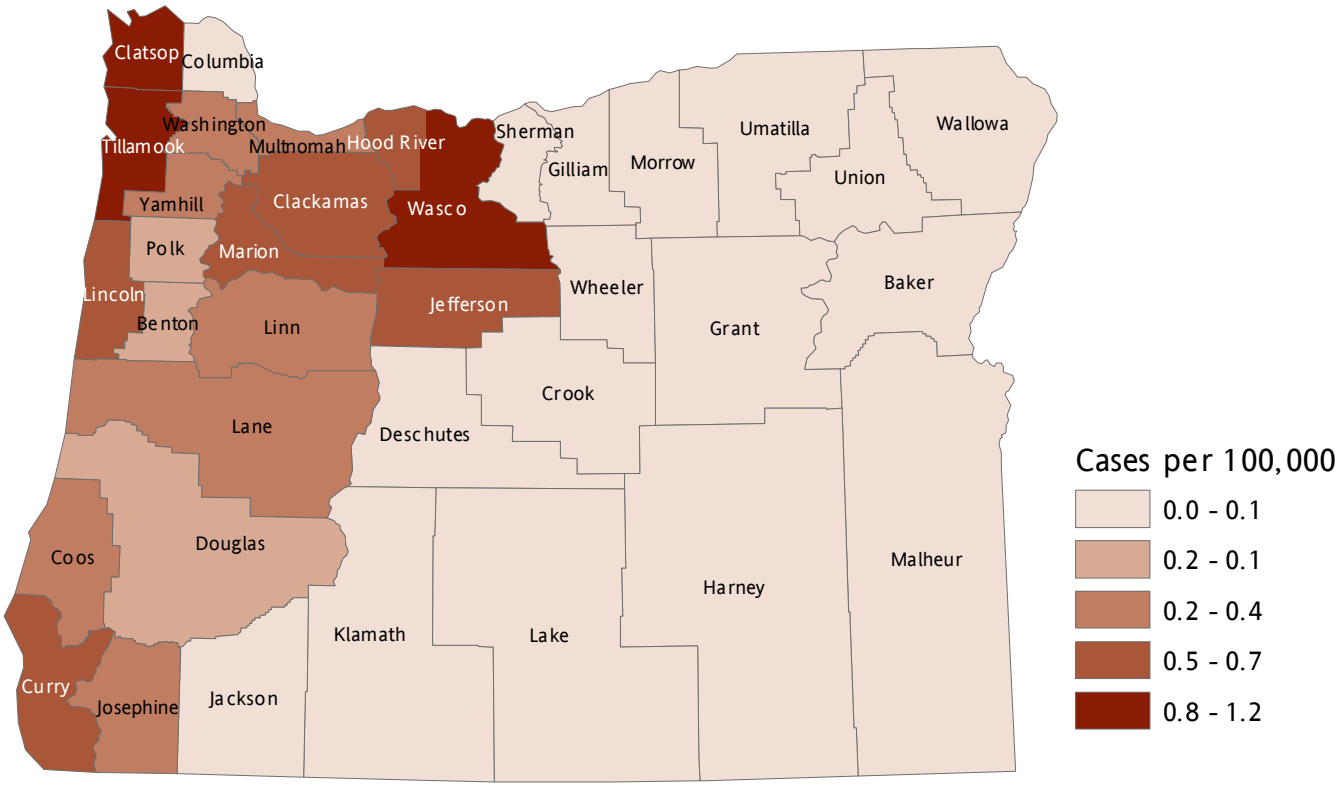



| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 0.5 | 0.3 | 0.6 | 0.5 | 0.2 | 0.3 | 0.3 | 0.1 | 0.2 | 0.3 | 0.4 | 0.2 | 0.2 | 0.5 | 0.4 | 0.3 |
| U.S. | 0.0 | 0.0 | 0.0 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.29 |

## Listeriosis by age and sex: Oregon, 2002–2011



## Incidence of listeriosis by county of residence: Oregon, 2002–2011



## Lyme disease

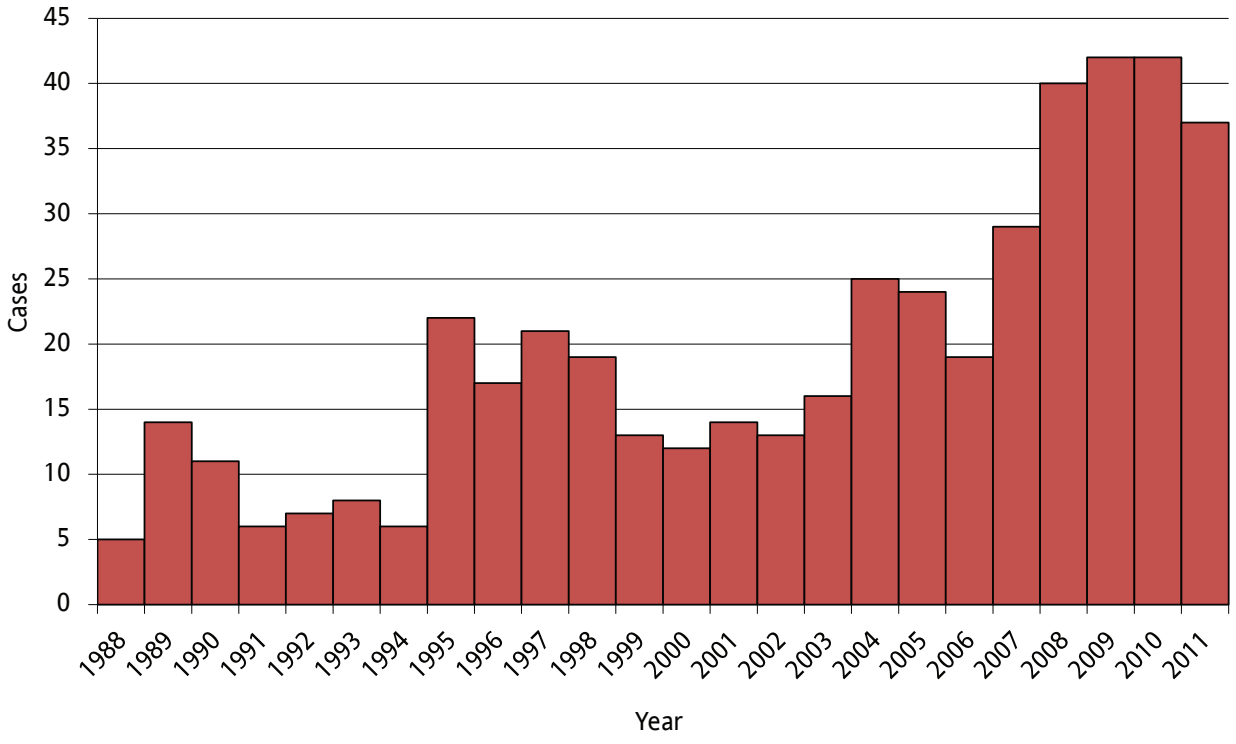
Lyme disease is a tick-borne zoonotic disease caused by the spirochete *Borrelia burgdorferi.* The first manifestation in approximately 60% of patients appears as a red macule or papule (bull's eye) that expands slowly in an annular manner, sometimes with multiple similar lesions. This distinctive skin lesion is called erythema migrans. The incubation period for Lyme disease ranges from three to 32 days after tick exposure; however, the early stages of the illness may be asymptomatic, and the patient may later develop systemic symptoms and rheumatologic, neurologic or cardiac involvement in varying combinations over a period of months to years.

Currently, increasing recognition of the disease is redefining enzootic areas for *B. burgdorferi*; Lyme disease cases have been reported in 47 states, and in Ontario and British Columbia, Canada. Elsewhere, related borrelioses have been found in Europe, the former Soviet Union, China and Japan.

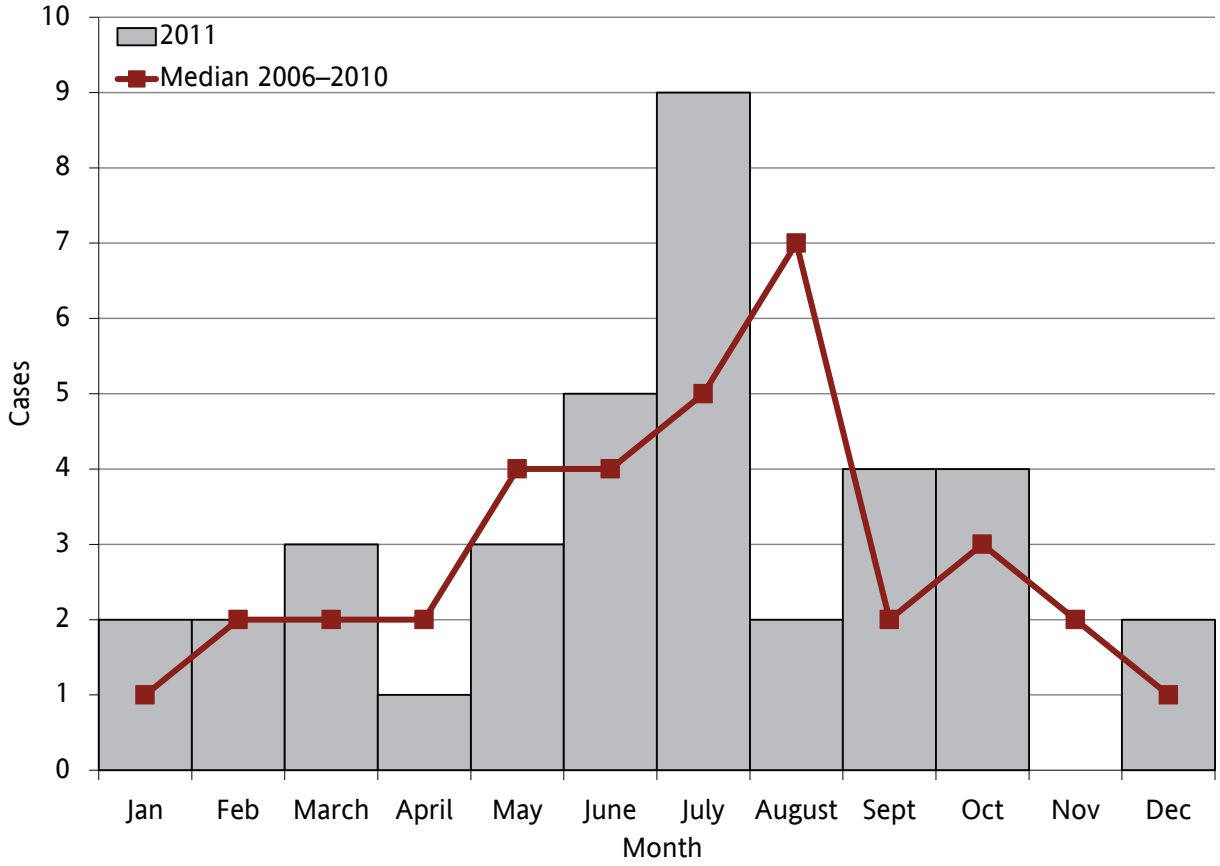
In 1997–1998, a tick identification and *Borrelia* isolation study was conducted by the CDC and the Oregon Department of Human Services in Deschutes, Josephine and Jackson counties. No ticks from Deschutes County were identified as carrying *Borrelia* in this study. The organism was isolated in 3.5% of *Ixodes pacificus* ticks tested.

During 2011, 30 presumptive and seven confirmed cases were reported in Oregon. The median age was 41 years. Twenty-two (59%) cases were female.

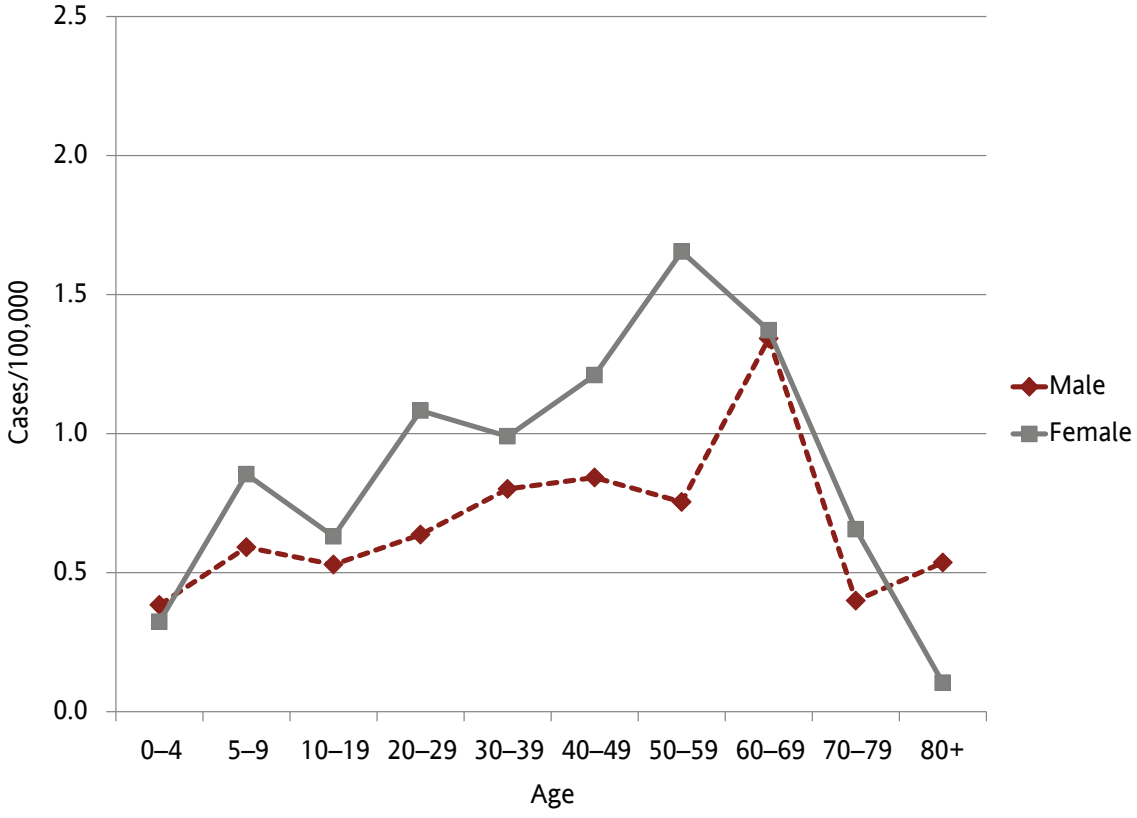
### Lyme disease by year: Oregon, 1988–2011



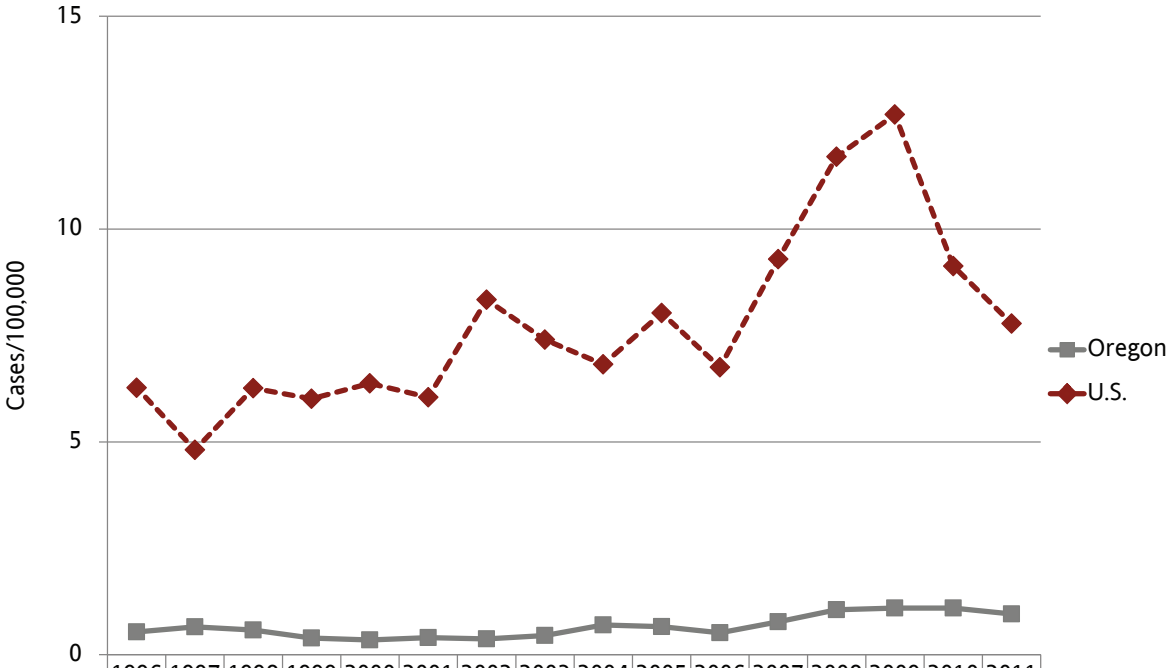
## Lyme disease by onset month: Oregon, 2011




## Incidence of Lyme disease by age and sex: Oregon, 2002–2011

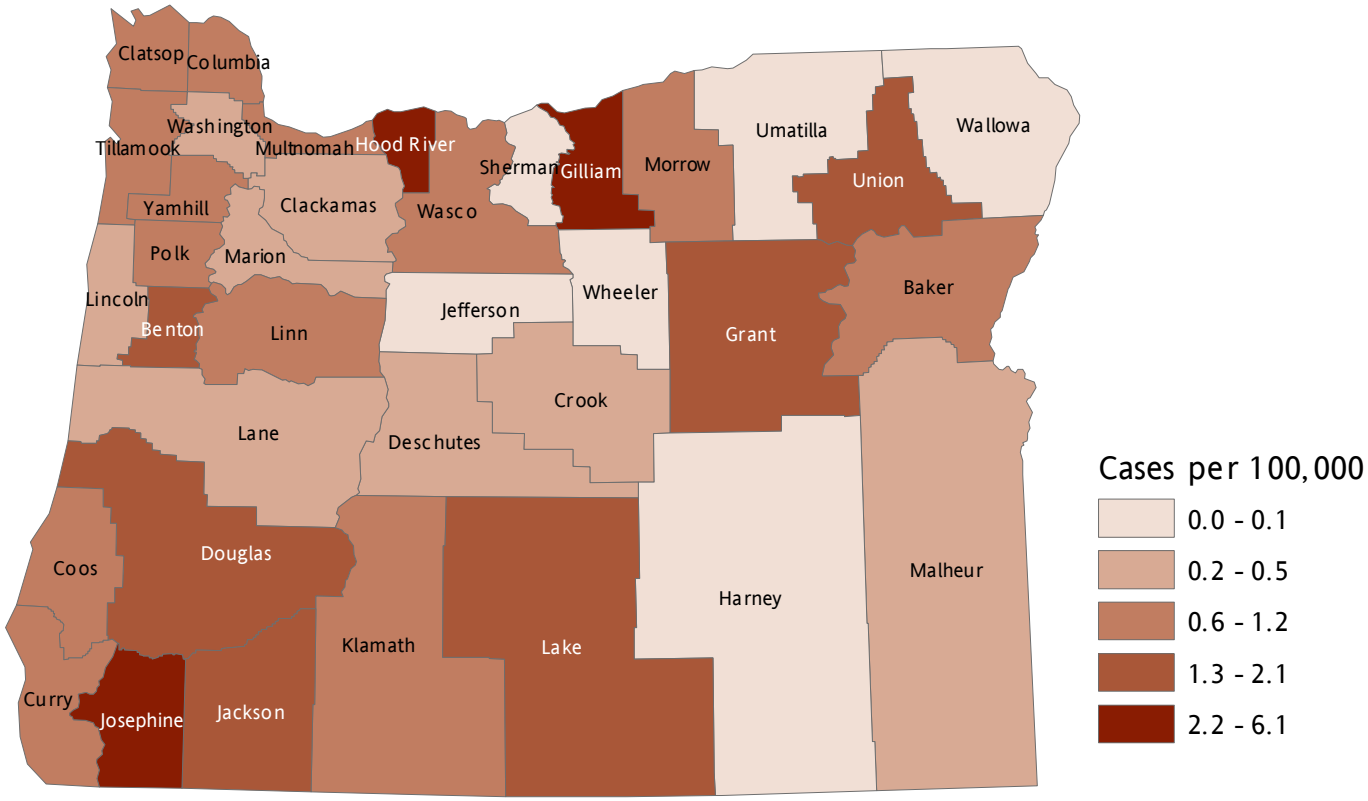


## Incidence of Lyme disease: Oregon vs. nationwide, 1996–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 0.5 | 0.7 | 0.6 | 0.4 | 0.3 | 0.4 | 0.4 | 0.5 | 0.7 | 0.7 | 0.5 | 0.8 | 1.1 | 1.1 | 1.1 | 1.0 |
| U.S. | 6.3 | 4.8 | 6.3 | 6.0 | 6.4 | 6.0 | 8.3 | 7.4 | 6.8 | 8.0 | 6.8 | 9.3 | 11.7 | 12.7 | 9.1 | 7.8 |

## Incidence of Lyme disease by county of residence*: Oregon, 2002–2011




*Not necessarily county of acquisition

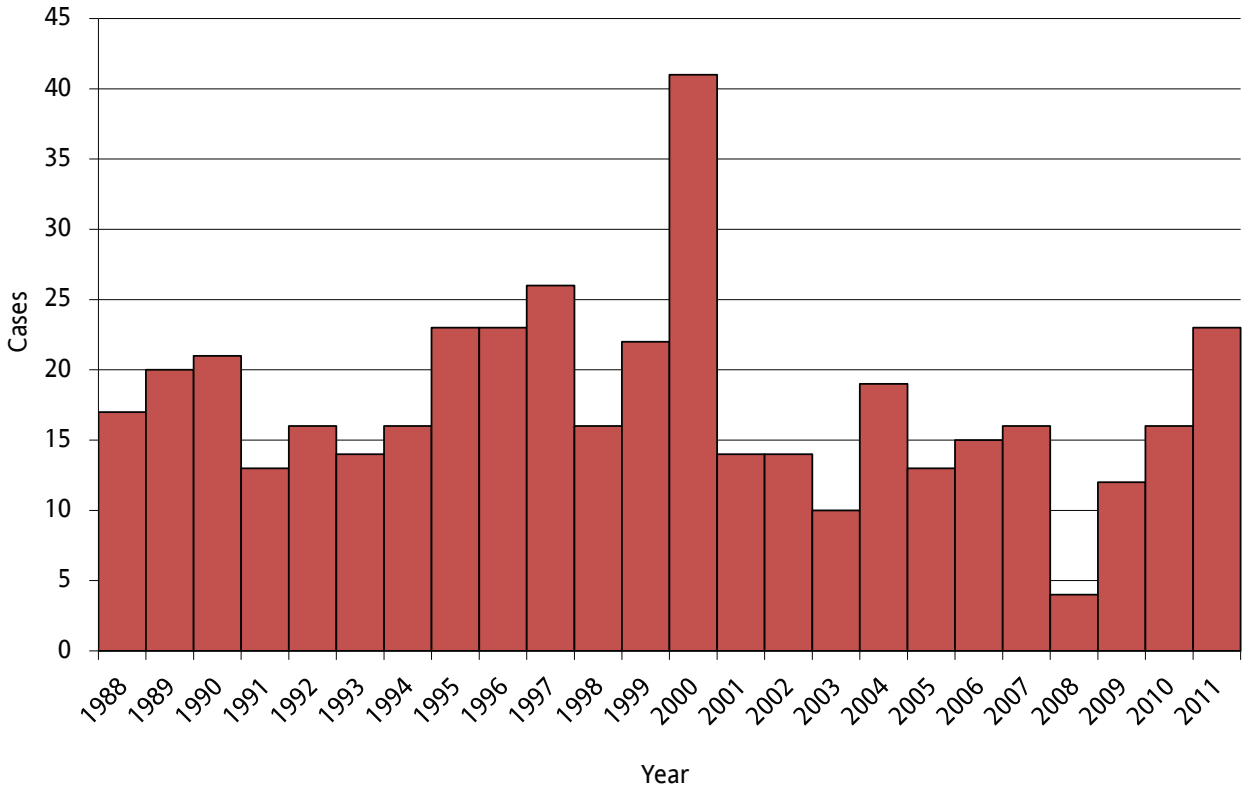
## Malaria

Worldwide, malaria is one of the most devastating of the communicable diseases, causing perhaps 1 million to 2 million deaths annually, not to mention an enormous burden of disability and medical costs. While transmission has not been documented in Oregon for decades, malaria is reported every year in our state; all cases have resulted from exposures outside the United States. Competent *Anopheles* mosquitoes are resident in Oregon, so limited local transmission remains a remote possibility.

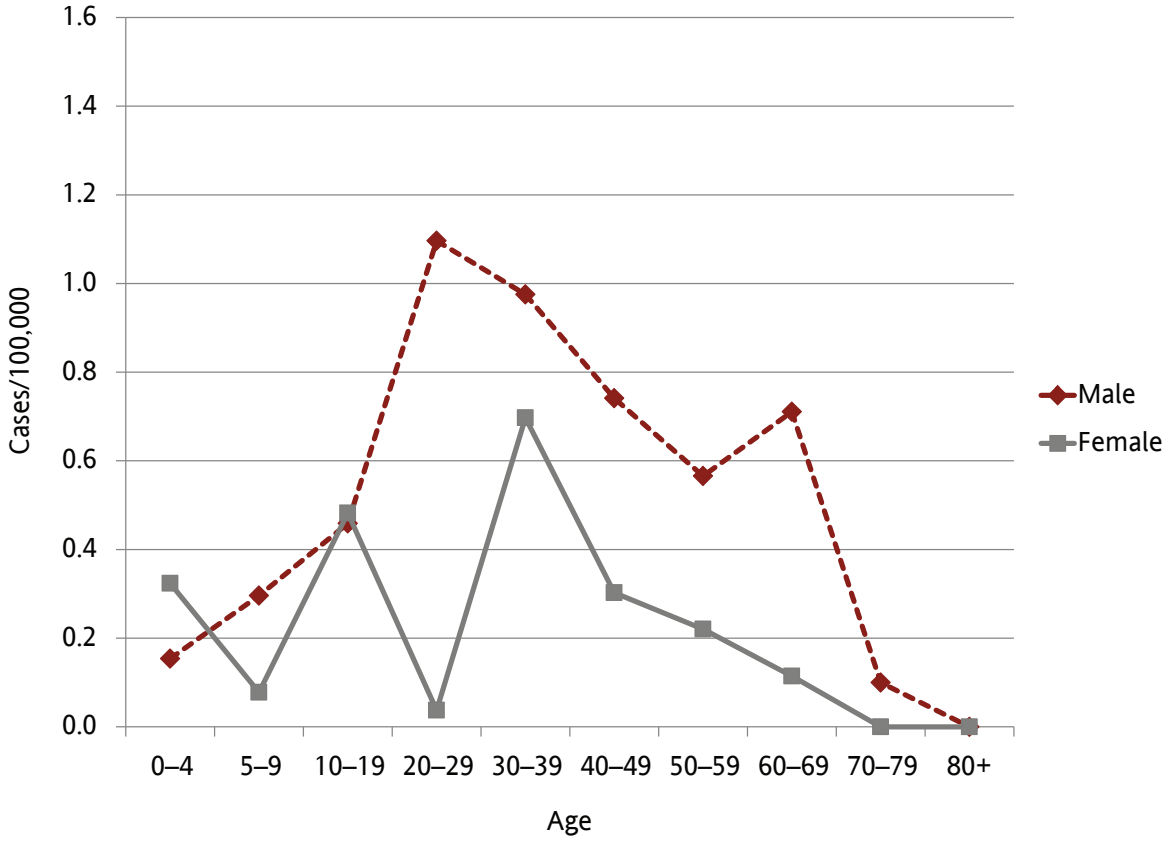
Twenty-three cases were reported in Oregon in 2011, up from 16 in 2010 and four in 2009. Oregon surveillance data contribute to the national database, which is used to tailor recommendations for prophylaxis and treatment. *Plasmodium falciparum* (the worst kind to have, and the most common worldwide) continues to be the most common species identified in Oregon cases; 13/23 cases in 2011 (57%). Of the 21 Oregon cases reported in 2011 who gave a travel history, 20 (95%) reported pre-onset travel in Africa. Competent advice about behavioral and chemical interventions can reduce risk to travelers.

In just the past couple of years *Plasmodium knowlesi*, long known as a parasite of macaques, has been recognized as the fifth malaria species to regularly infect humans — primarily in Southeast Asia. No cases have been reported in Oregon yet. The first clinician to correctly report a lab-confirmed case will win a prize.

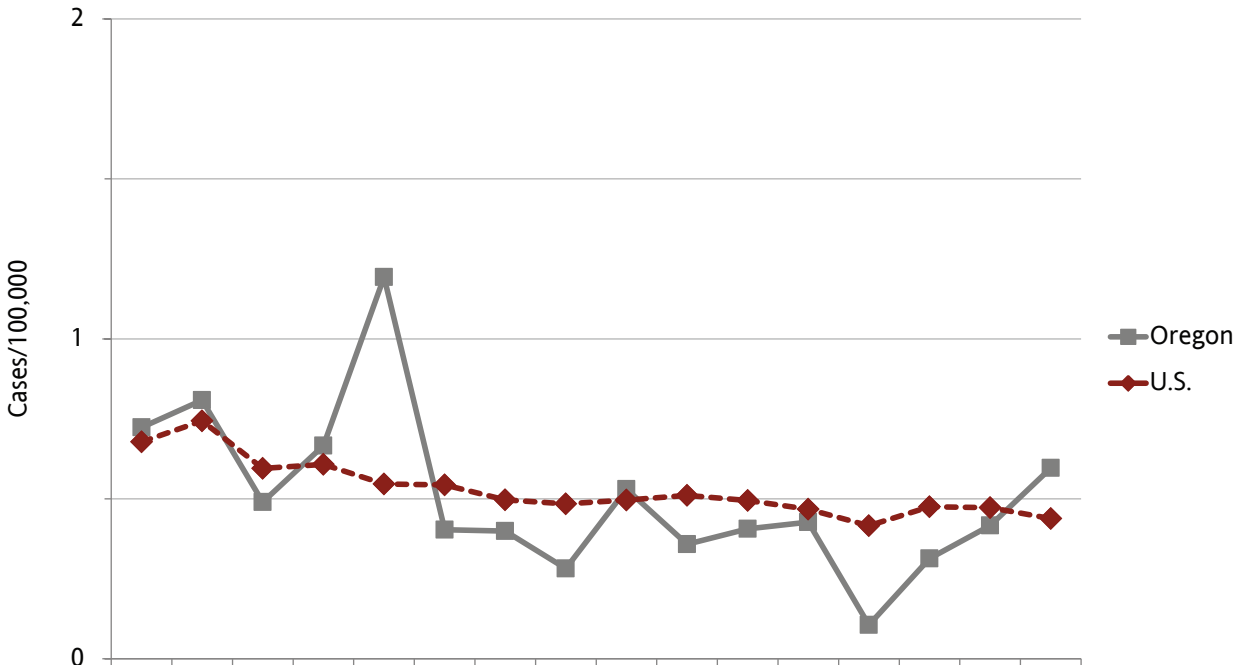
### Malaria by year: Oregon, 1988–2011



## Incidence of malaria by age and sex: Oregon, 2002–2011

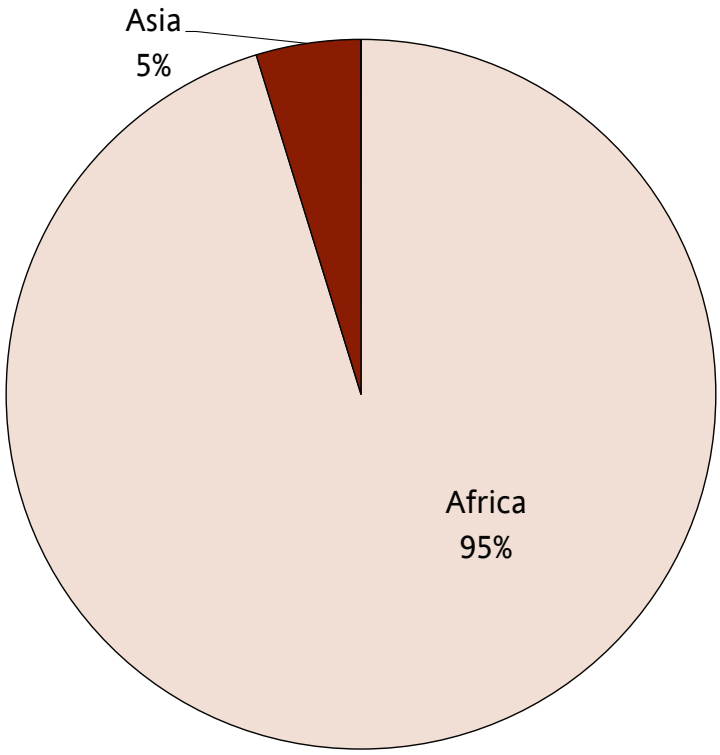



## Incidence of malaria: Oregon vs. nationwide, 1996–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 0.7 | 0.8 | 0.5 | 0.7 | 1.2 | 0.4 | 0.4 | 0.3 | 0.5 | 0.4 | 0.4 | 0.4 | 0.1 | 0.3 | 0.4 | 0.6 |
| U.S. | 0.7 | 0.7 | 0.6 | 0.6 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.5 | 0.5 | 0.4 |

## Malaria cases by continent of acquisition: Oregon, 2011



## Measles

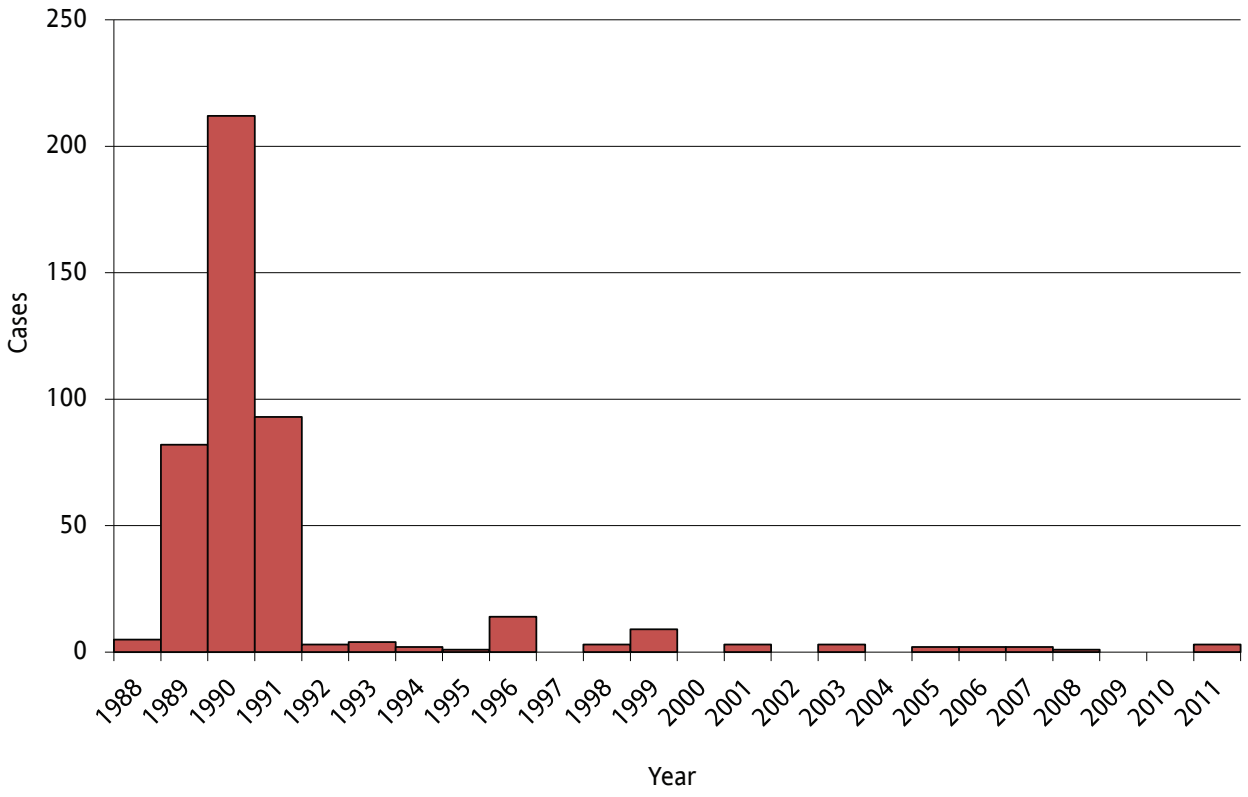
Measles is an acute, highly communicable viral illness known for its red, blotchy rash that starts on the face and then becomes generalized. The rash is preceded by a febrile prodrome that includes cough, coryza and conjunctivitis, and sometimes photophobia and Koplik spots. Diagnosis is confirmed by the presence of serum IgM antibodies (in a patient who has not recently been immunized).

During 1989–1991, a major resurgence of measles occurred in the United States, with more than 55,000 cases and 120 deaths reported. The resurgence was characterized by an increasing proportion of cases among unvaccinated preschool-aged children. A focus on increasing vaccination among preschool children by following the 1989 recommendation for two doses of MMR vaccine resulted in a dramatic reduction in illness. Endemic measles has been eliminated from the United States, but cases are occasionally imported.

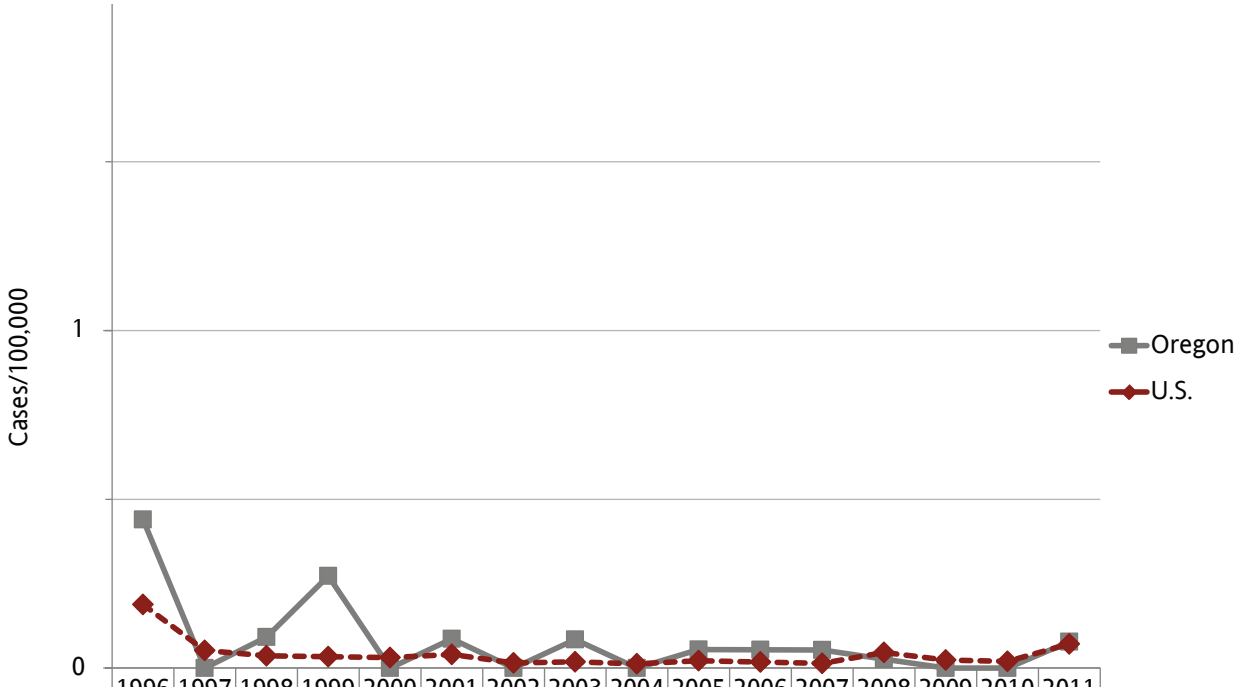
In Oregon, two doses of measles vaccination have been required for entry into kindergarten since 1998. In 2011, >94% of kindergartners had received two doses of measles-containing vaccine. Since 2002, 13 cases have been reported in Oregon; nine of these were imported, and four were linked to imported cases. Most imported cases originated in Asia and Europe and occurred both among Oregon citizens traveling abroad and persons visiting Oregon from other countries. The median age of cases has been 23 (range, 11 months–49) years. Most cases were either unvaccinated (10) or had undocumented vaccination status (1). Two cases were vaccinated.

Though measles is highly infectious, the risk of exposure to measles in Oregon remains low. Sustaining high levels of vaccination is important to limit the spread of measles from imported cases and to prevent it from becoming re-established as an endemic disease in the United States.

## Measles by year: Oregon, 1988–2011

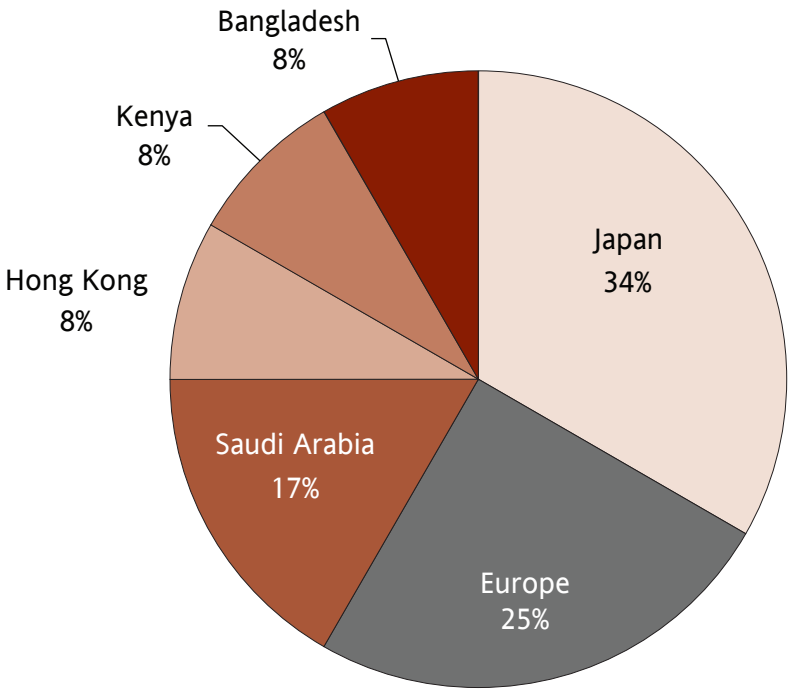



## Incidence of measles: Oregon vs. nationwide, 1996–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 0.4 | 0.0 | 0.1 | 0.3 | 0.0 | 0.1 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.1 | 0.0 | 0.0 | 0.0 | 0.1 |
| U.S. | 0.2 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |

## Measles by country of importation: 1997–2011



## Meningococcal disease

Reported cases of invasive meningococcal infections, including sepsis and meningitis, have declined from the hyperendemic levels seen in 1993–1997 attributable to a clonal strain of serogroup B. Respiratory secretions and droplets continue to be shared among Oregonians and predispose secondary cases.

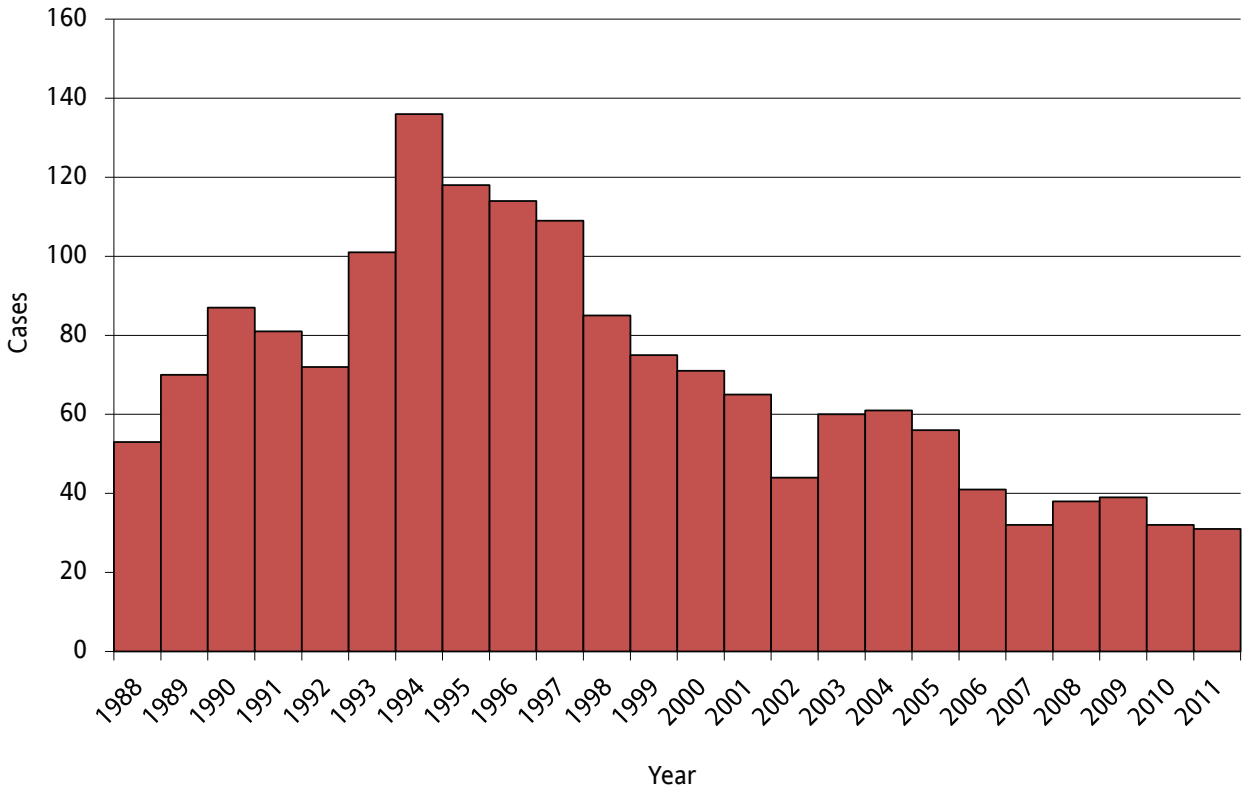
In 2011, there were 31 reports of meningococcal disease in Oregon. This continues the overall decline in cases throughout the state. The highest majority (36%) of illness in Oregon was caused by serogroup Y organisms, followed by serogroups C (32%), B (21%) and W-135 (11%). This serogroup distribution more closely matches the national profile. Historically, serogroup B has been the predominant serogroup causing invasive meningococcal disease in Oregon.

The burden of meningococcal disease is highest in those 0–4 years of age (3.36/100,000), with a second, lower peak in incidence in young adults aged 18–24 years (1.68/100,000).

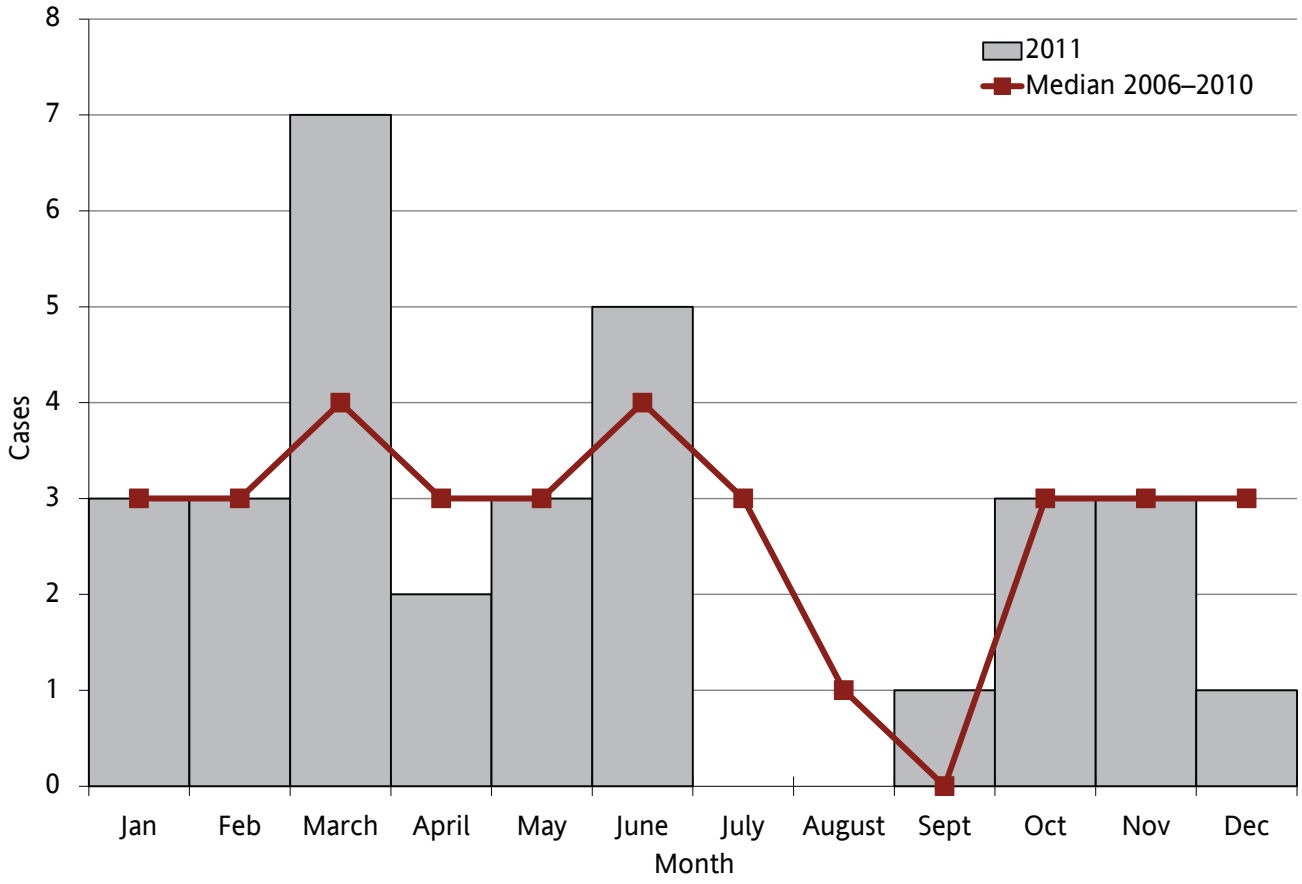
The quadrivalent (serogroups A, C, Y and W-135) meningococcal conjugate vaccine is recommended routinely for adolescents 11 through 18 years of age and persons at high risk for meningococcal disease. The vaccine does not protect against serogroup B disease.

For updated recommendations, visit: www.cdc.gov/vaccines/pubs/ACIP-list.htm.

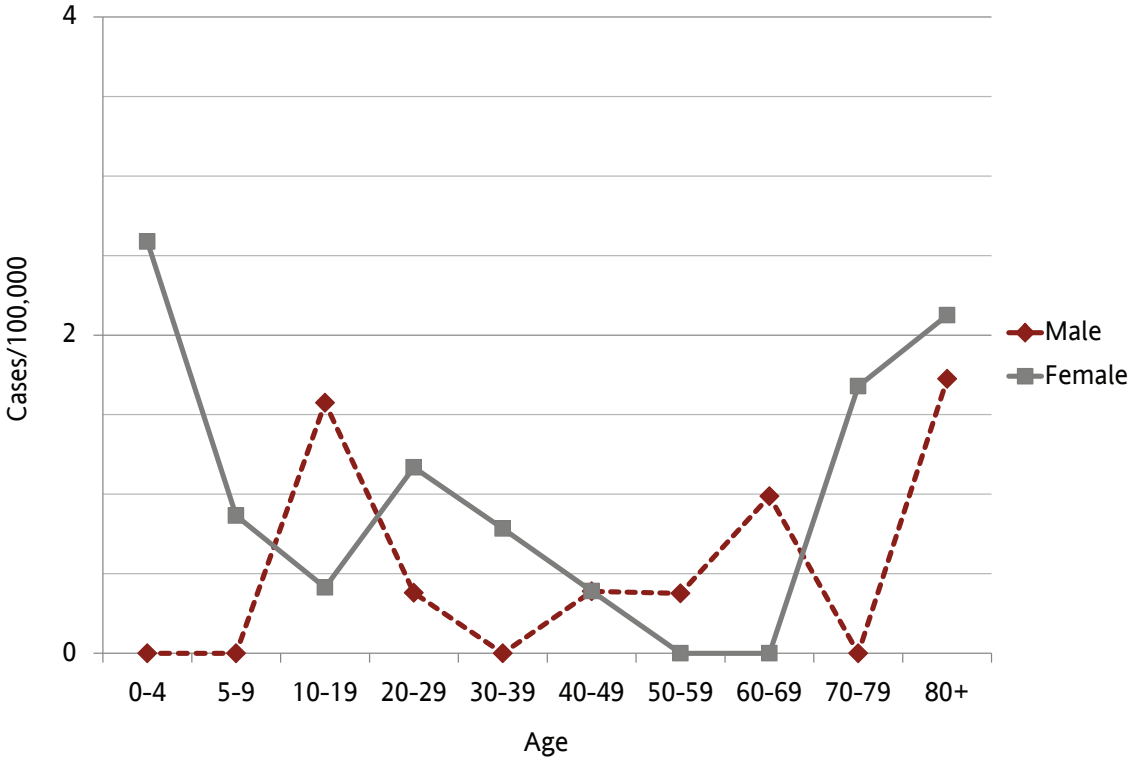
### Meningococcal disease by year: Oregon, 1988–2011



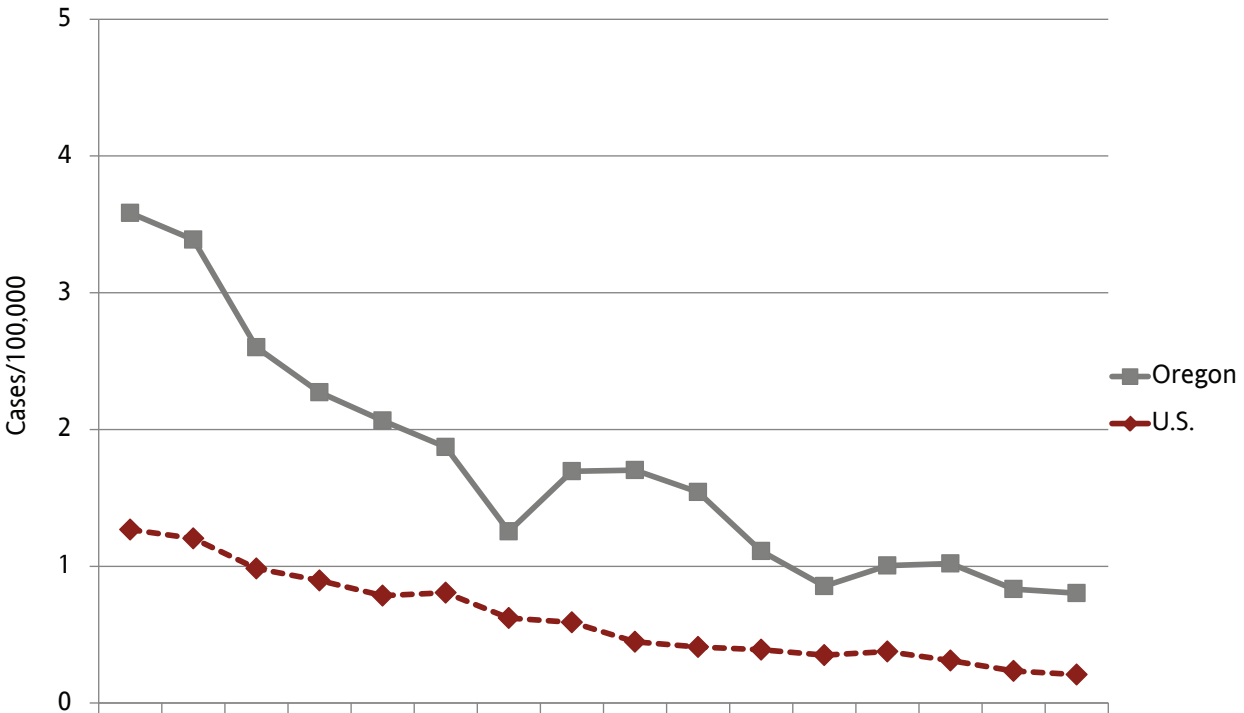
## Meningococcal disease by onset month: Oregon, 2011




## Incidence of meningococcal disease by age and sex: Oregon, 2011

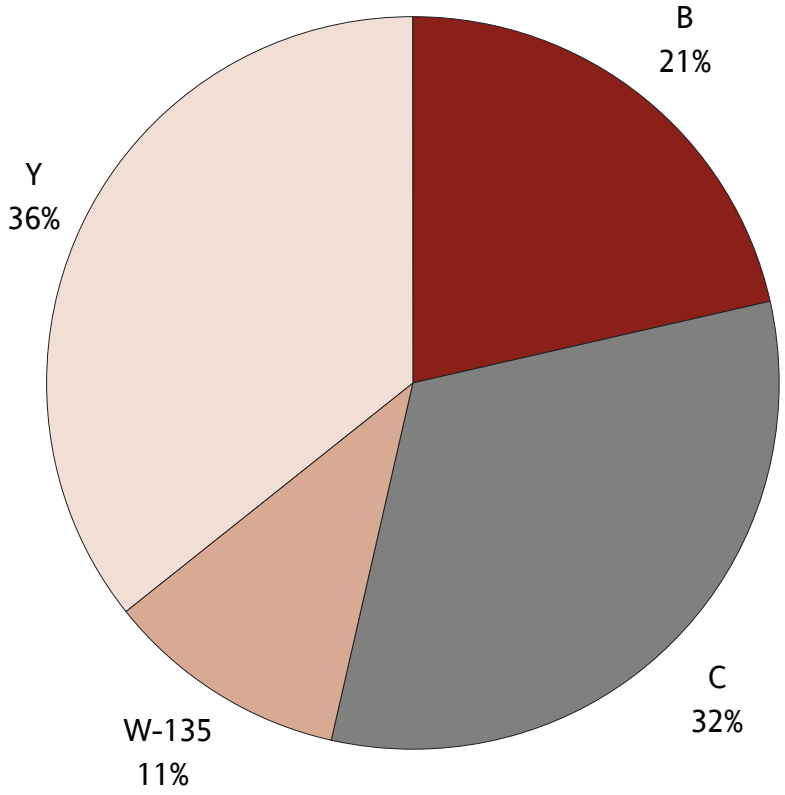


## Incidence of meningococcal disease: Oregon vs. nationwide, 1996–2011

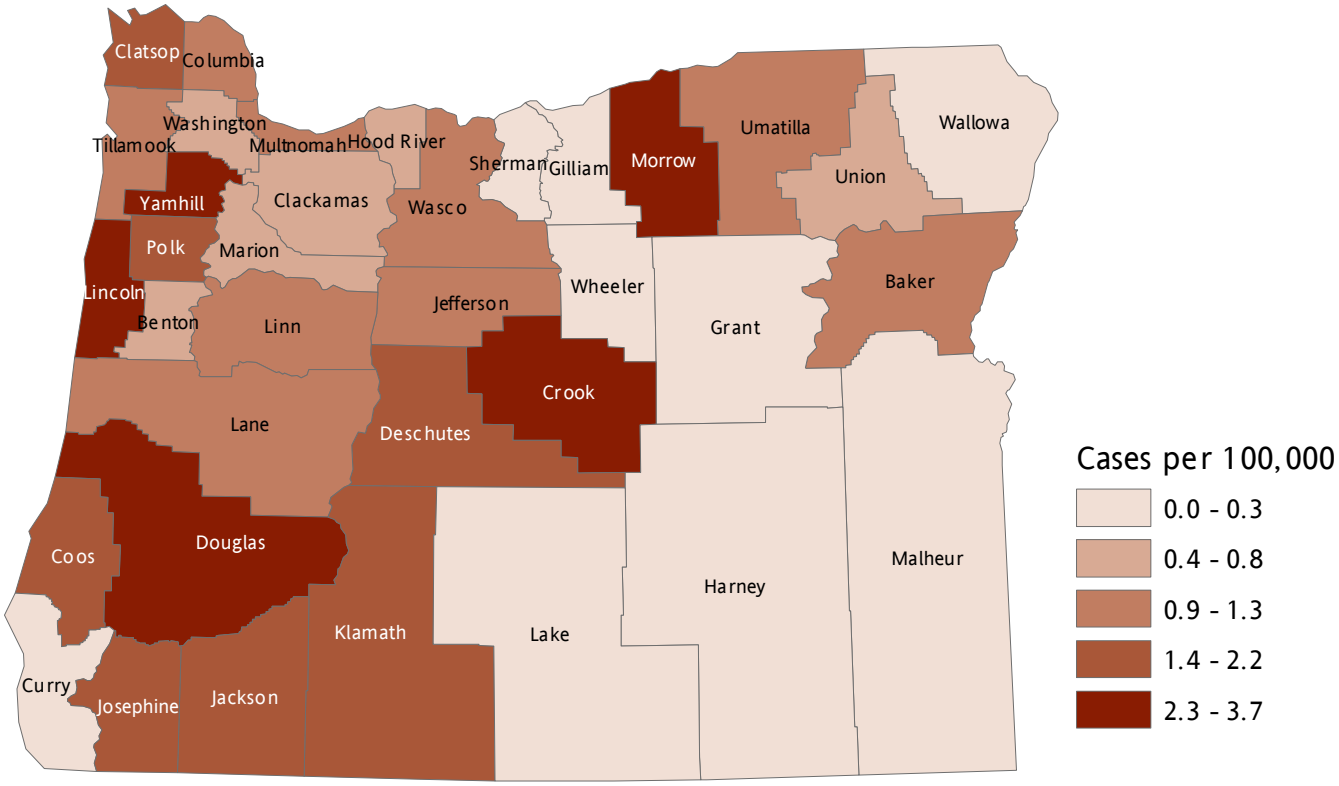



| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 3.6 | 3.4 | 2.6 | 2.3 | 2.1 | 1.9 | 1.3 | 1.7 | 1.7 | 1.5 | 1.1 | 0.9 | 1.0 | 1.0 | 0.8 | 0.8 |
| U.S. | 1.3 | 1.2 | 1.0 | 0.9 | 0.8 | 0.8 | 0.6 | 0.6 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.2 | 0.2 |

## Meningococcal disease by serogroup: Oregon, 2011



## Incidence of meningococcal disease by county of residence: Oregon, 2002–2011



## Mumps

Mumps is an acute viral illness characterized by fever and swelling of the salivary glands, typically the parotids. Transmission is generally airborne through respiratory droplets or through direct contact with nasal secretions.

Reporting of this vaccine-preventable viral infection was discontinued in Oregon in 1981. Once an almost universal childhood infection, mumps incidence decreased in the United States with routine childhood vaccination. Mumps reporting was re-established in Oregon July 1, 2006, prompted by outbreaks of illness among both vaccinated and unvaccinated persons. Three cases were reported in 2010 and four cases were reported in 2011.

Because as many as 20% of mumps infections are asymptomatic, and nearly 50% are associated with non-specific or primarily respiratory symptoms (with or without parotitis), mumps infections are significantly underreported.

In response to the 2006 nationwide mumps outbreak, the Advisory Committee on Immunization Practices (ACIP) updated its recommendations for prevention and control of mumps, with vaccination remaining the cornerstone of prevention.

## Pertussis

Pertussis is a highly contagious acute bacterial infection of the respiratory tract attributable to *Bordetella pertussis*. It is transmitted from person-to-person through contact with respiratory secretions (droplet transmission). The disease is most severe in infants and young children, many of whom suffer the intense paroxysmal coughing that usually terminates in an inspiratory "whoop." Although the disease may be milder in older persons, those who are infected may transmit the disease to other susceptible persons, including unimmunized or incompletely immunized infants.

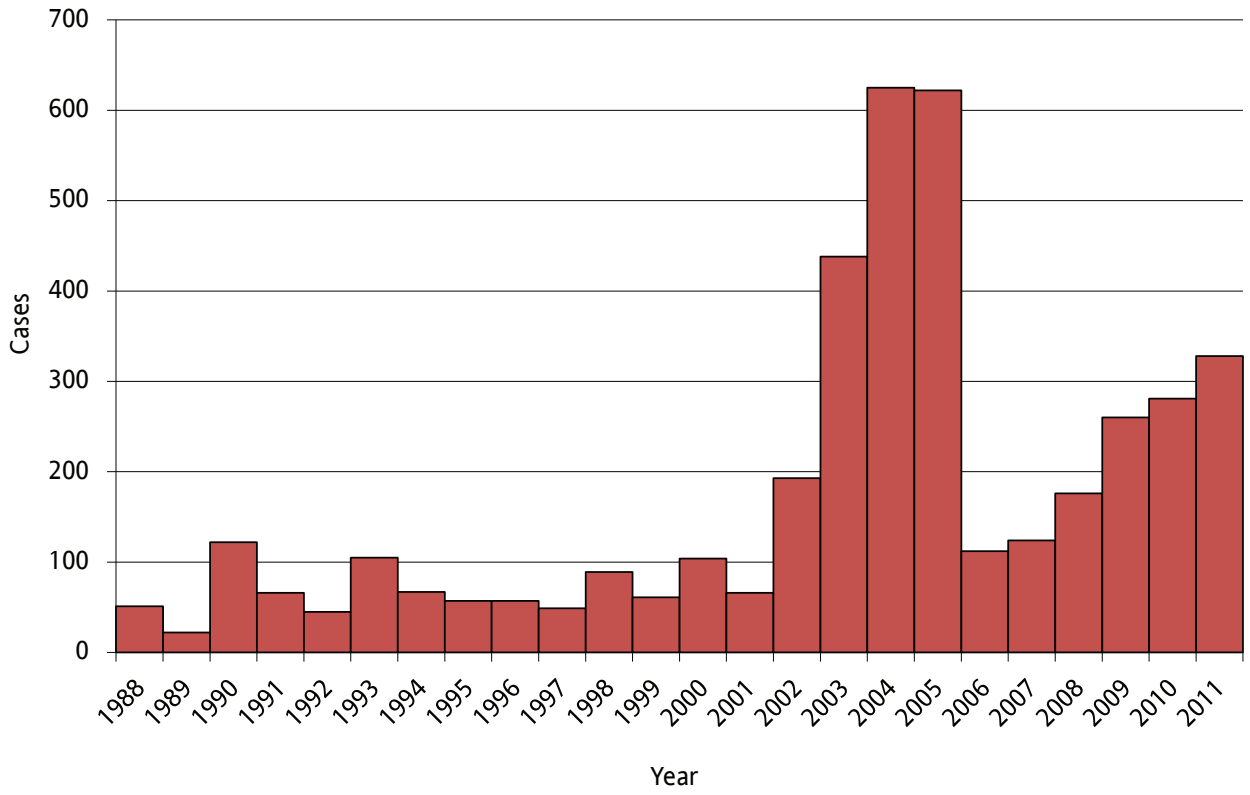
Despite high childhood immunization rates, pertussis remains endemic in the United States, with epidemics every three to five years. Pertussis has been on the rise in Oregon since 2006. Because pertussis often goes undiagnosed in adolescents and adults, it is likely that the actual number of cases greatly exceeds the number reported.

Infants have the highest risk of pertussis-related complications and death and have had the highest reported incidence rate in Oregon. Since 2000, 235 (44.8%) of the 525 infants diagnosed with pertussis in Oregon have been hospitalized, and four have died. In 2011, 42 (12.8%) of Oregon's cases were infants, 17 (40.5%) were hospitalized, and none died.

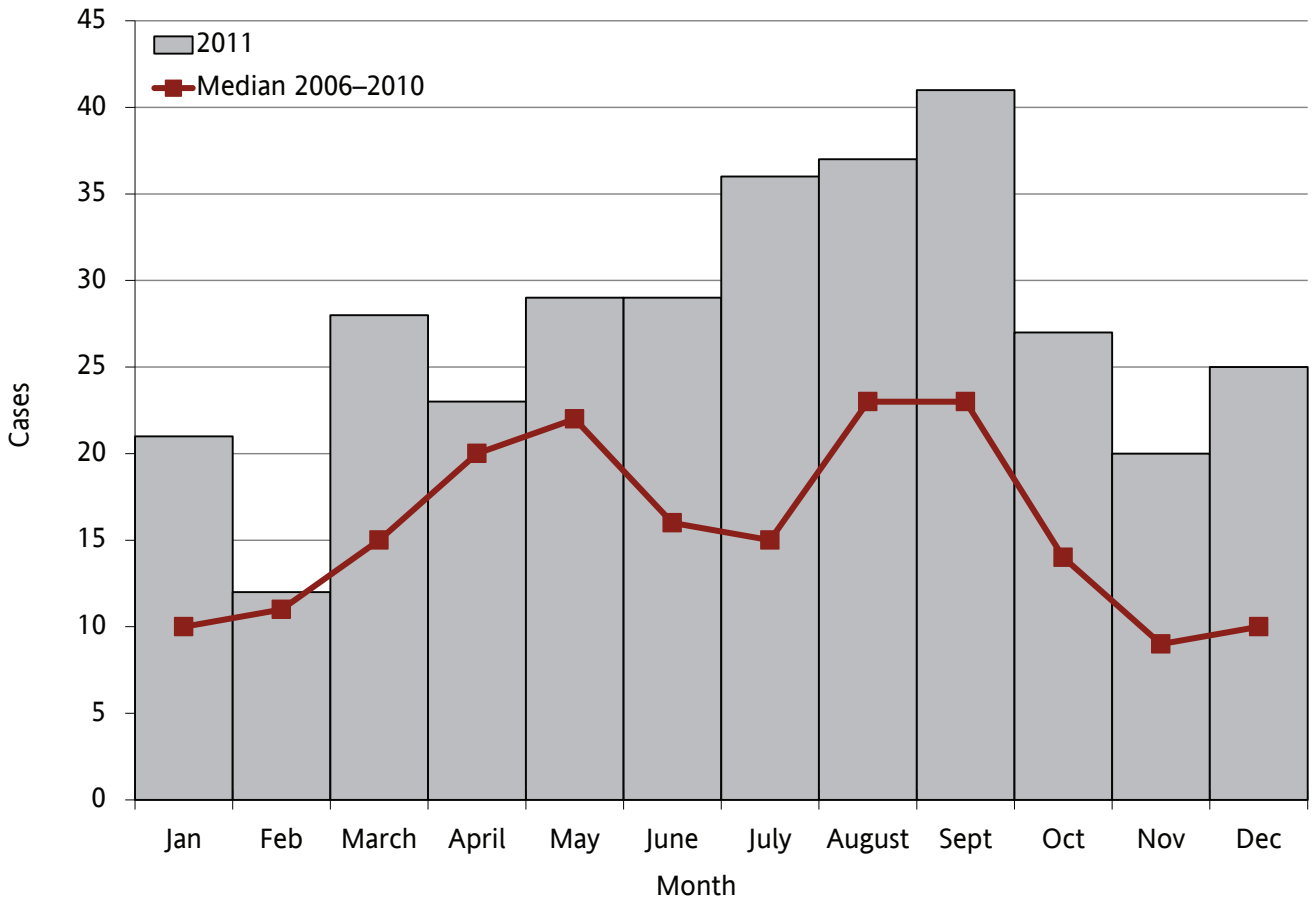
The greatest increase in incidence in recent years has been in adolescents and adults. Since 2000, approximately 60% of the pertussis cases have been >10 years of age. Tdap vaccine should provide some immunity to the disease for all of us older kids. Those ≥10 (including persons ≥65) years of age who have not received Tdap should receive a single dose of Tdap. It is preferred that pregnant women who have not previously received Tdap be vaccinated with Tdap during the third or late second trimester (≥20 weeks' gestation), to prevent infant pertussis. Health care workers in particular are encouraged to get a dose.

Since 2010, with funding from the federal Centers for Disease Control and Prevention, Oregon launched the Metropolitan Area Pertussis Surveillance (MAPS), enhancing surveillance in Clackamas, Multnomah and Washington counties to better delineate the epidemiology of pertussis. Each reported case is investigated extensively, and standardized data are collected. It is hoped that these data will guide future developments in regional and national areas of public health policy.

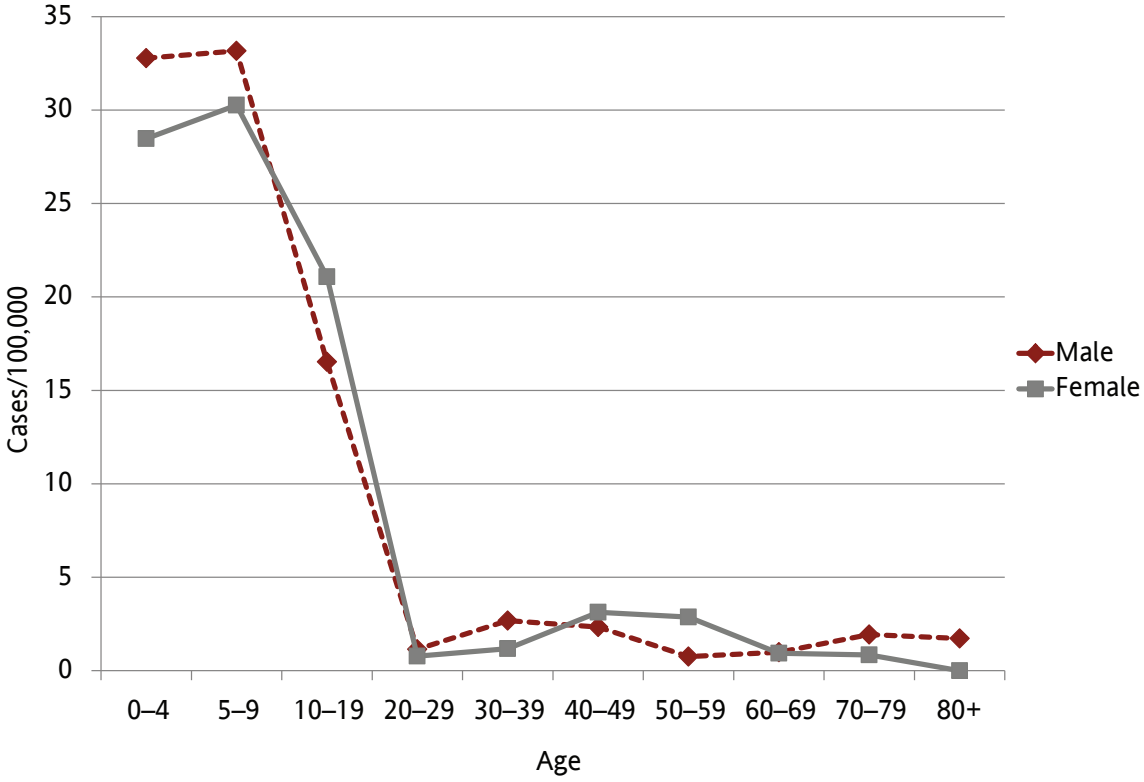
## Pertussis by year: Oregon, 1988–2011



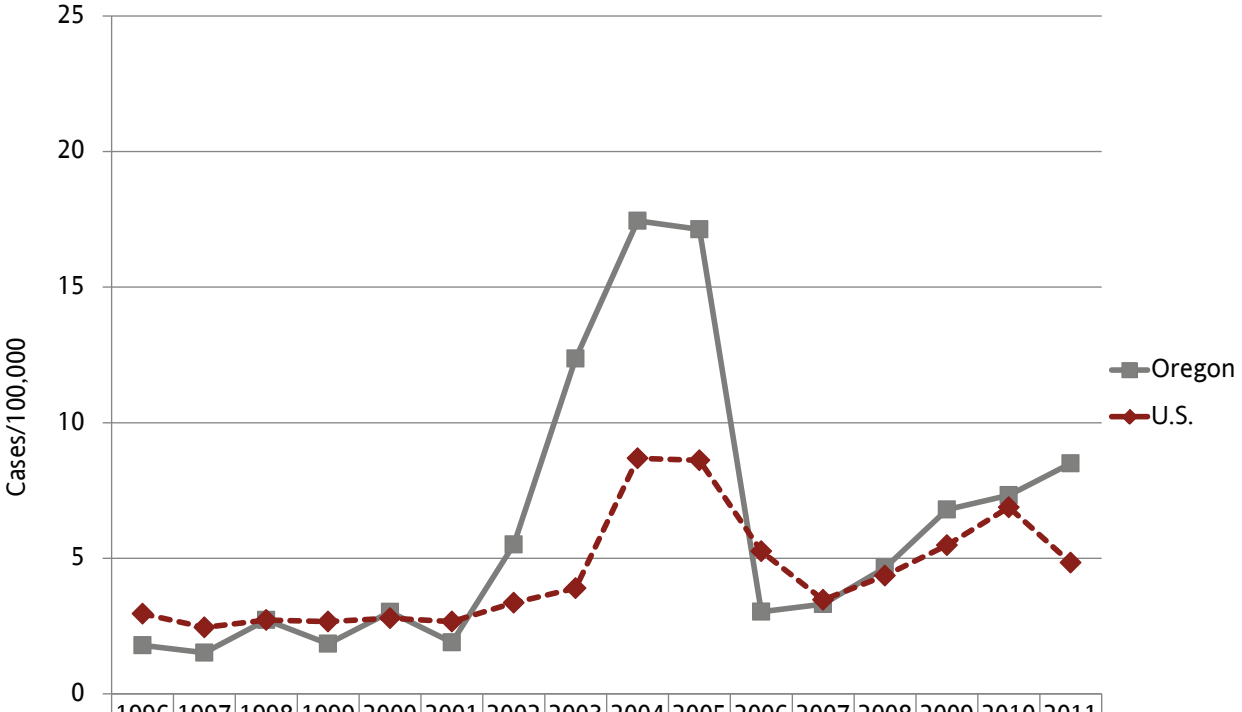

## Pertussis by onset month: Oregon, 2011



## Incidence of pertussis by age and sex: Oregon, 2011

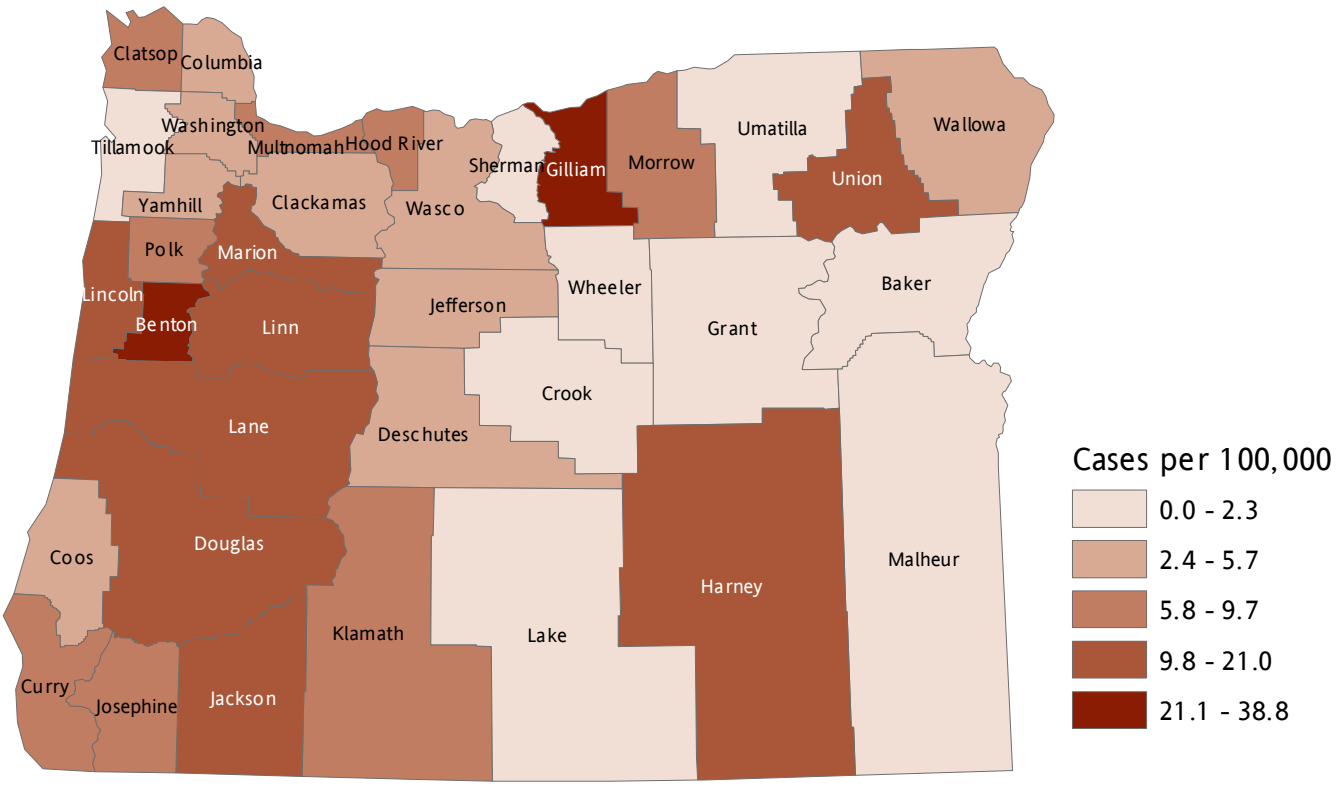



## Incidence of pertussis: Oregon vs. nationwide, 1996–2011




| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 1.8 | 1.5 | 2.7 | 1.8 | 3.0 | 1.9 | 5.5 | 12.4 | 17.4 | 17.1 | 3.0 | 3.3 | 4.7 | 6.8 | 7.3 | 8.5 |
| U.S. | 3.0 | 2.5 | 2.7 | 2.7 | 2.8 | 2.7 | 3.4 | 3.9 | 8.7 | 8.6 | 5.3 | 3.5 | 4.4 | 5.5 | 6.9 | 4.8 |

## Incidence of pertussis by county of residence: Oregon, 2002–2011



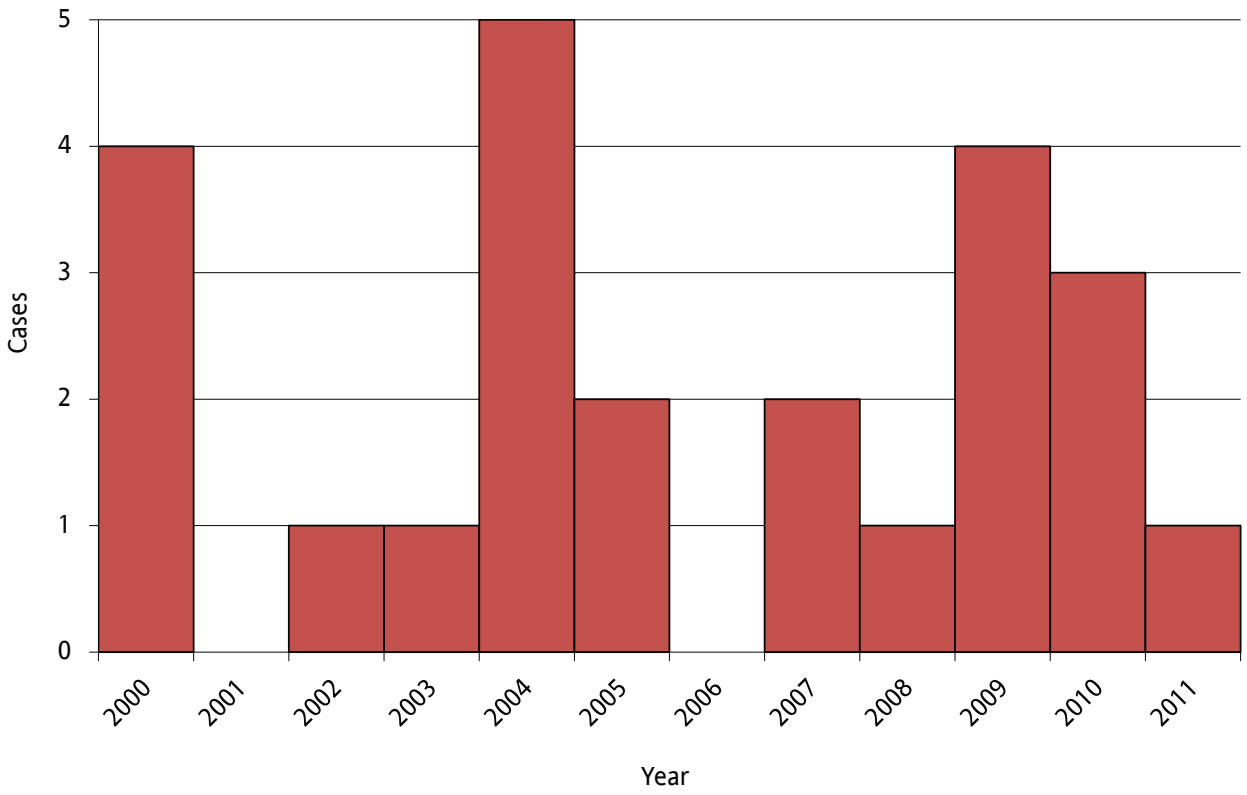
# Q fever

Q fever is a bacterial infection caused by *Coxiella burnetii*. It can result in acute or chronic illness in humans, and is usually acquired after contact with infected animals or exposure to contaminated environments. The primary reservoirs are cattle, sheep and goats. Infections result from breathing contaminated droplets from infected animals or consumption of raw milk. Acute Q fever can be accompanied by a host of symptoms, including high fever, severe headache, malaise, myalgia, chills, sweats, nausea, vomiting, non-productive cough, diarrhea, abdominal pain and chest pain. Most people recover from acute Q fever infection, but some (<5%) develop chronic illness, which often manifests as endocarditis. Infection can be treated with antibiotics.

Up to 3% or 4% of the general population and 10% of people with a history of extensive livestock handling will test positive for Q fever at any given time, due to past lifetime exposure.

Q fever reports are rare in Oregon; in 2011 one chronic case was reported. The Washington State Department of Health investigated a goat-associated outbreak of Q fever following the detection of *C. burnetii* in a placenta collected from a goat farm in April 2011. Following an investigation of 21 farms in three states, 21 human cases were identified. Evidence of goat infection was detected in 16 of 17 herds tested.

## Q fever by year: Oregon, 2000–2011



## Rabies

Rabies is an acute infection of the central nervous system caused by a neurotropic rhabdovirus of the genus *Lyssavirus*. All mammals, including humans, are susceptible to rabies. In humans, rabies causes a rapidly progressive and fatal encephalomyelitis. The incubation period in humans is usually two to 12 weeks, but there have been documented incubation periods as long as seven years. Bites from infected animals constitute the primary route of transmission. Transplanted organs, including corneas from patients with undiagnosed rabies, have also caused infection in recipients.

The Pacific Northwest is considered to be free of terrestrial rabies. In Oregon, the main reservoirs of rabies are bats and animals, such as foxes and cats that may come in contact with rabid bats. An average of 10% of the bats tested in Oregon are positive for rabies. This is a targeted sample of bats that have bitten humans and animals. Bat contact and bat bites should be carefully evaluated in a timely manner. All potential human exposures should result in a call to a local public health department office. The Oregon State Public Health Laboratory will test most human exposures and Oregon State University, Veterinary Diagnostic Laboratory will test for animal-to-animal exposures.

Eleven bats, five foxes and a coyote tested positive in 2011. All foxes and the coyote were residents of Josephine County.

Persons not previously immunized for rabies who are exposed to a rabid animal should obtain human rabies immune globulin (HRIG) infiltrated at the site of the bite and four doses of rabies vaccine, one each on days 0, 3, 7 and 14. Prior to 2008, a five-dose regimen was recommended; however, studies indicated that four doses of vaccination in combination with HRIG elicited an immune response and an additional dose was not associated with more favorable outcomes.

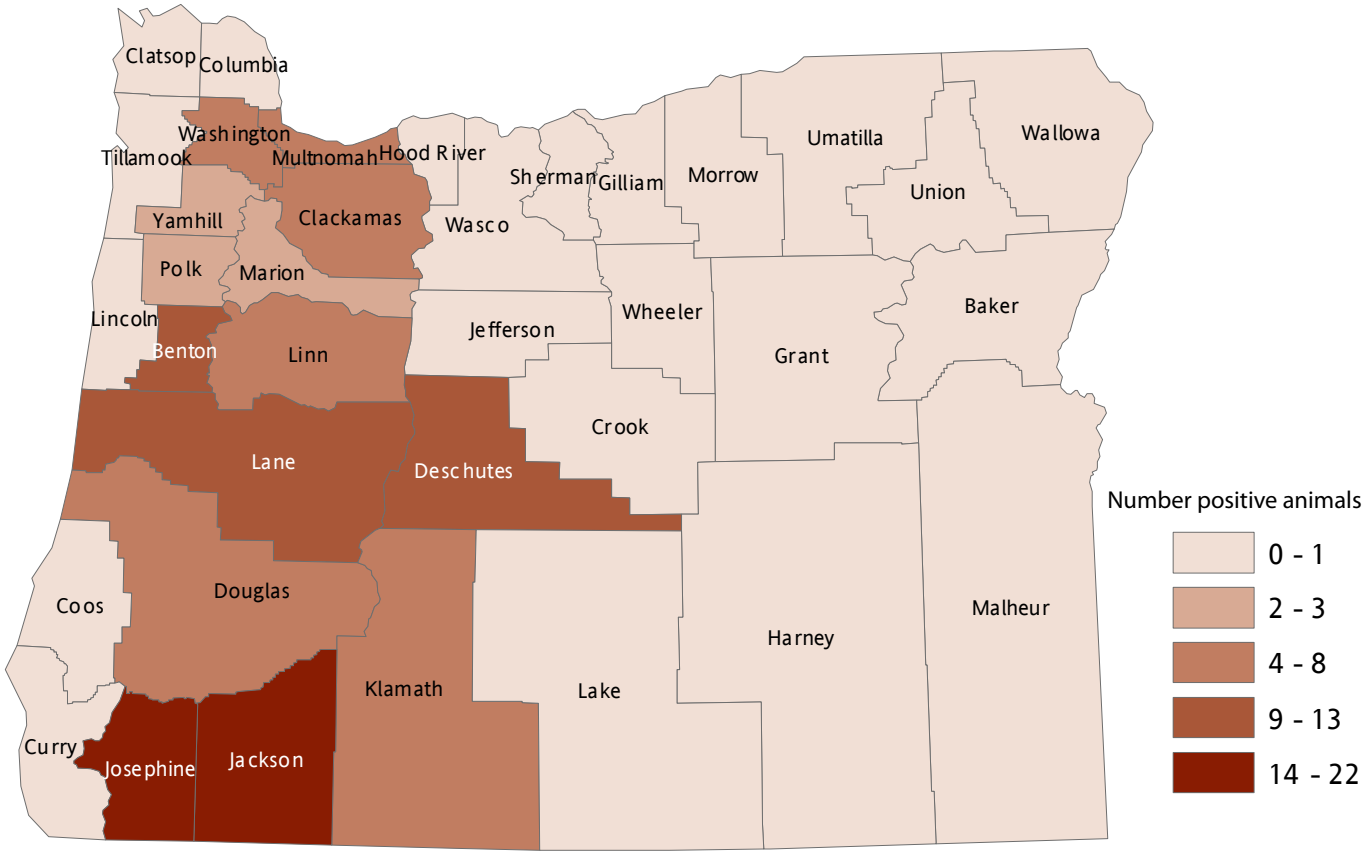
Though bats are the reservoir in Oregon, canine rabies still accounts for the majority of human rabies cases worldwide. Travelers to rabies-enzootic countries should be warned to seek immediate medical care if they are bitten by any mammal.

Additional information and an algorithm to follow for assessment of rabies risk are provided here. For a larger copy of this algorithm visit: http://public.health.oregon.gov/DiseasesConditions/DiseasesAZ/rabies/Documents/rabalg.pdf.

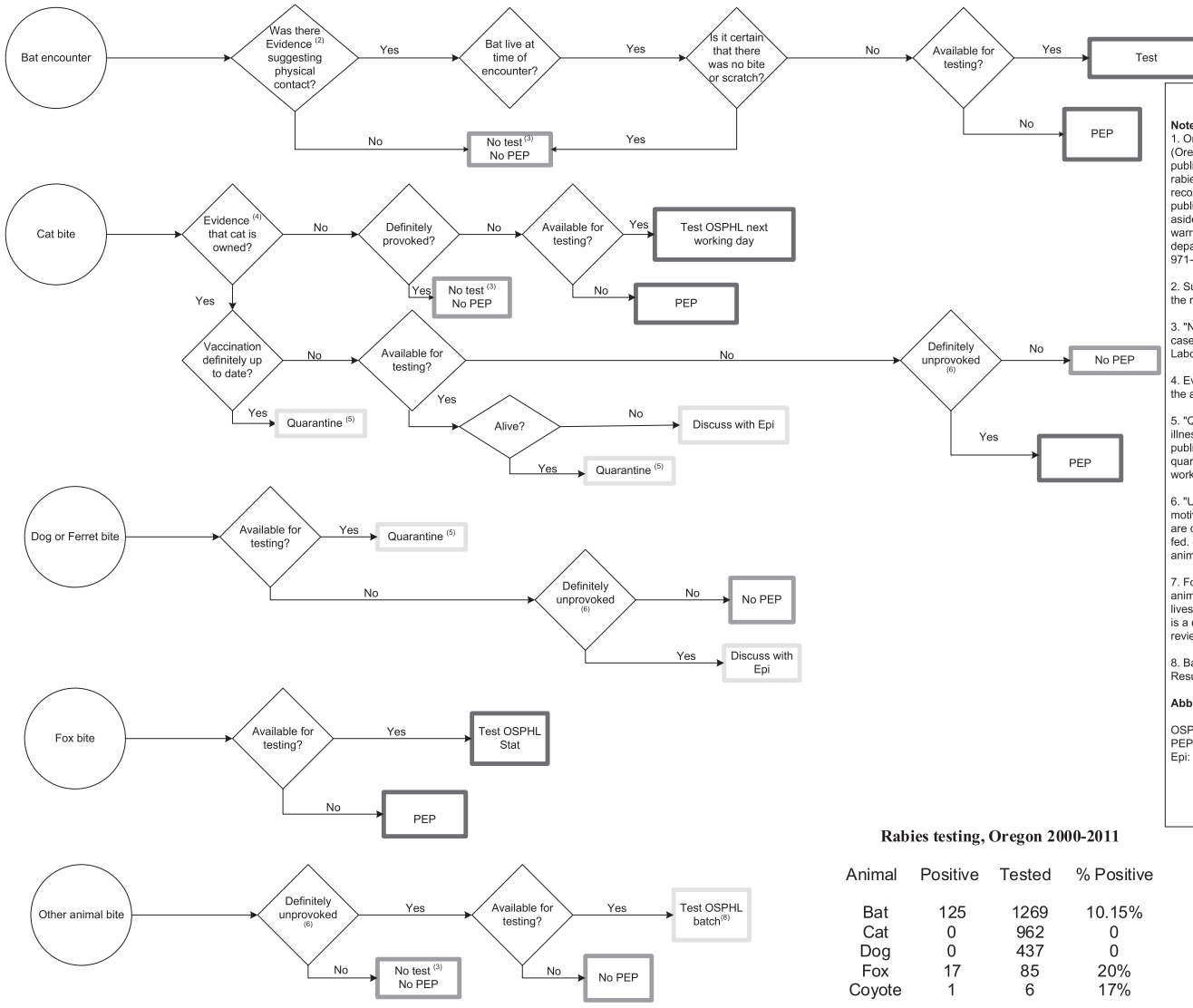
## Rabies tests in Oregon, 2000–2011 (number of positive/total tested)

| Year | Bat | Cat | Dog | Fox |
|---|---|---|---|---|
| 2000 | 8/73 | 0/79 | 0/56 | 1/4 |
| 2001 | 4/59 | 0/67 | 0/46 | 0/1 |
| 2002 | 12/134 | 0/102 | 0/27 | 2/4 |
| 2003 | 6/61 | 0/75 | 0/36 | 1/5 |
| 2004 | 7/88 | 0/105 | 0/42 | 0/2 |
| 2005 | 8/83 | 0/100 | 0/48 | 0/1 |
| 2006 | 23/126 | 0/72 | 0/26 | 2/4 |
| 2007 | 12/153 | 0/80 | 0/33 | 0/1 |
| 2008 | 13/128 | 0/58 | 0/23 | 0/3 |
| 2009 | 11/117 | 0/73 | 0/27 | 0/1 |
| 2010 | 10/104 | 0/67 | 0/41 | 6/15 |
| 2011 | 11/143 | 0/84 | 0/32 | 5/44 |
| **Totals 2000–2011** | **125/1269 10%** | **0/962** | **0/437** | **17/85 20%** |

## Animal rabies cases by county: Oregon, 2002–2011



## Algorithm for Prevention of Rabies After Animal Encounters in Oregon [1]




**Notes**

1. Oregon law mandates reporting of any bite of a human being by any other mammal (Oregon Administrative Rule 333-018-0015[5] [c]); such reports should be made to the local public health authority for the jurisdiction in which the patient resides. Decisions about rabies PEP are the purview of the clinician attending the patient; although these recommendations regarding the need for rabies PEP represent the best judgment of state public-health officials, they are not binding on clinicians. Clinicians should be advised that, aside from concern about rabies, prophylaxis against tetanus or bacterial infection might be warranted, depending on the nature of the wound and the animal involved. Local health department personnel are advised to call Acute and Communicable Disease Prevention at 971-673-1111 with specific questions regarding application of these guidelines.

2. Such evidence might include, e.g., a young child's waking up, crying, with a bat found in the room.

3. "No Test" means that the animal will not be tested at OSPHL, at state expense. In such cases, the animal may be tested at the Oregon State University Veterinary Diagnostics Laboratory (541-737-3261) at private expense.

4. Evidence of ownership might include, e.g., presence of collar or previous appearances of the animal in a neighborhood.

5. "Quarantine" means confining a dog, cat or ferret for 10 days to observe for signs of illness after biting a human being. The nature of the confinement is determined by the local public health authority. If the animal develops neurological illness during the period of quarantine, it should be euthanized and its head shipped to OSPHL for testing within one working day.

6. "Unprovoked" implies that in the context of the situation there was no obvious alternative motivation for the animal to bite. A good history is essential .In practice, unprovoked bites are quite rare. Examples of provocation would include being hit by a car, being handled, fed. or caged; being cornered in a garage, having a jogger run past your yard or crowding animal's space, etc.

7. For purposes of determining need for rabies PEP, wolf-hybrids are considered wild animals and not dogs. Wolf-dog hybrids that bite or otherwise expose persons, pets, or livestock should be considered for euthanasia and rabies examination. Whether an animal is a dog or a wolf-dog hybrid must be determined by a licensed veterinarian, subject to review by the State Public Health Veterinarian or designee (OR 333-019-0022).

8. Batch testing for rabies is generally done at OSPHL on Mondays and Wednesdays. Results are available the following day.

**Abbreviations**

OSPHL: Oregon State Public Health Laboratory (503-229-5882)
PEP: Post-Exposure Prophylaxis against rabies
Epi: Epidemiologists at the Oregon Department of Human Services; Weekdays, nights and weekends 971-673-1111

### Rabies testing, Oregon 2000-2011

| Animal | Positive | Tested | % Positive |
|---|---|---|---|
| Bat | 125 | 1269 | 10.15% |
| Cat | 0 | 962 | 0 |
| Dog | 0 | 437 | 0 |
| Fox | 17 | 85 | 20% |
| Coyote | 1 | 6 | 17% |

Oregon Health Authority

Office of Disease Prevention and Epidemiology

Acute and Communicable Disease Prevention

I:\Diseases\Rabies\2012

## Salmonellosis

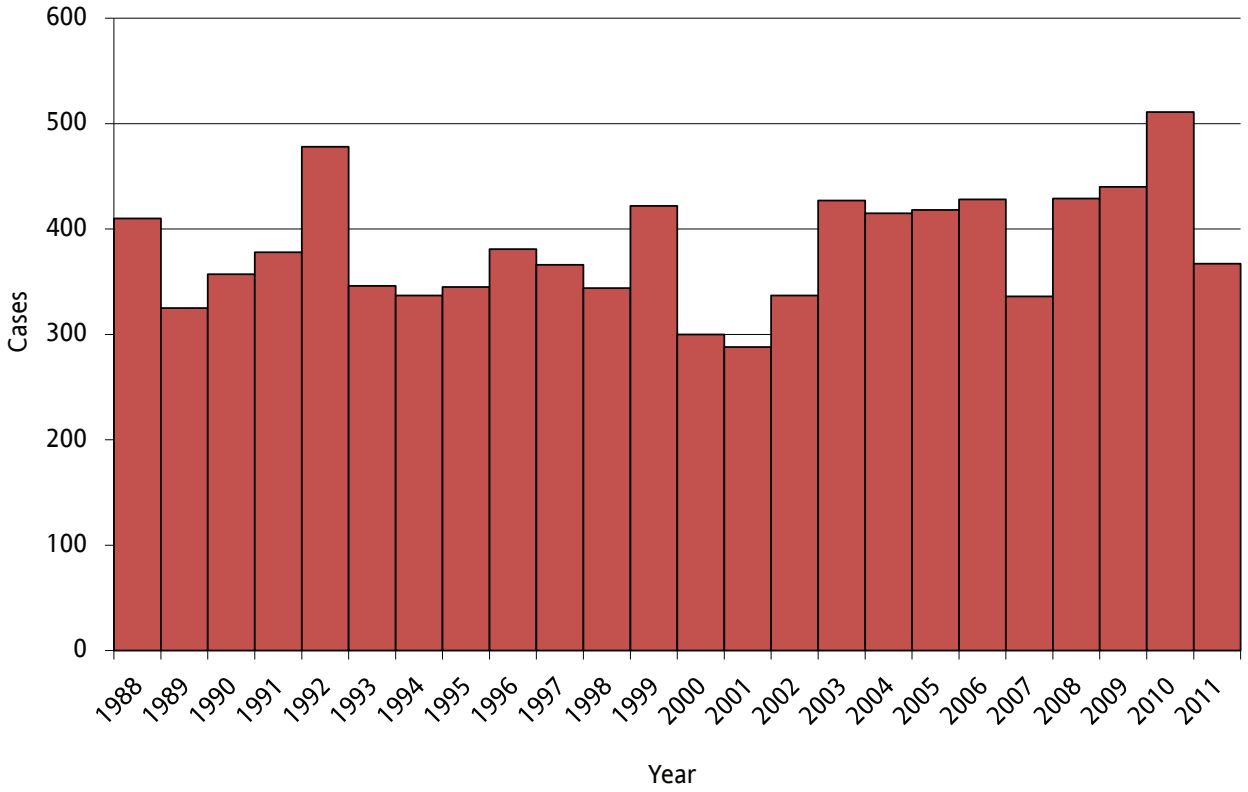
Salmonellosis is a bacterial illness characterized by acute abdominal pain, diarrhea, and often fever that usually begins one to five days after infection. Excretion of *Salmonella* may persist for several days or even months beyond the acute phase of illness. Antibiotics are contraindicated for most patients (the exceptions being those at high risk of invasive infection) and they may increase the duration of excretion.

A wide range of domestic and wild animals are carriers of *Salmonella*, including poultry, swine, cattle, rodents, iguanas, tortoises, turtles, young poultry, dogs and cats. Most human infections are thought to come from consumption of fecally contaminated food or water, but other environmental exposures may be hard to document and may be underappreciated. Raw or undercooked produce and products of animal origin — such as eggs, milk, meat and poultry — have been implicated as common sources of animal and human salmonellosis. Though not as common as *Echerichia coli* O157, person-to-person transmission is well documented. The incidence of infection is highest among young children.

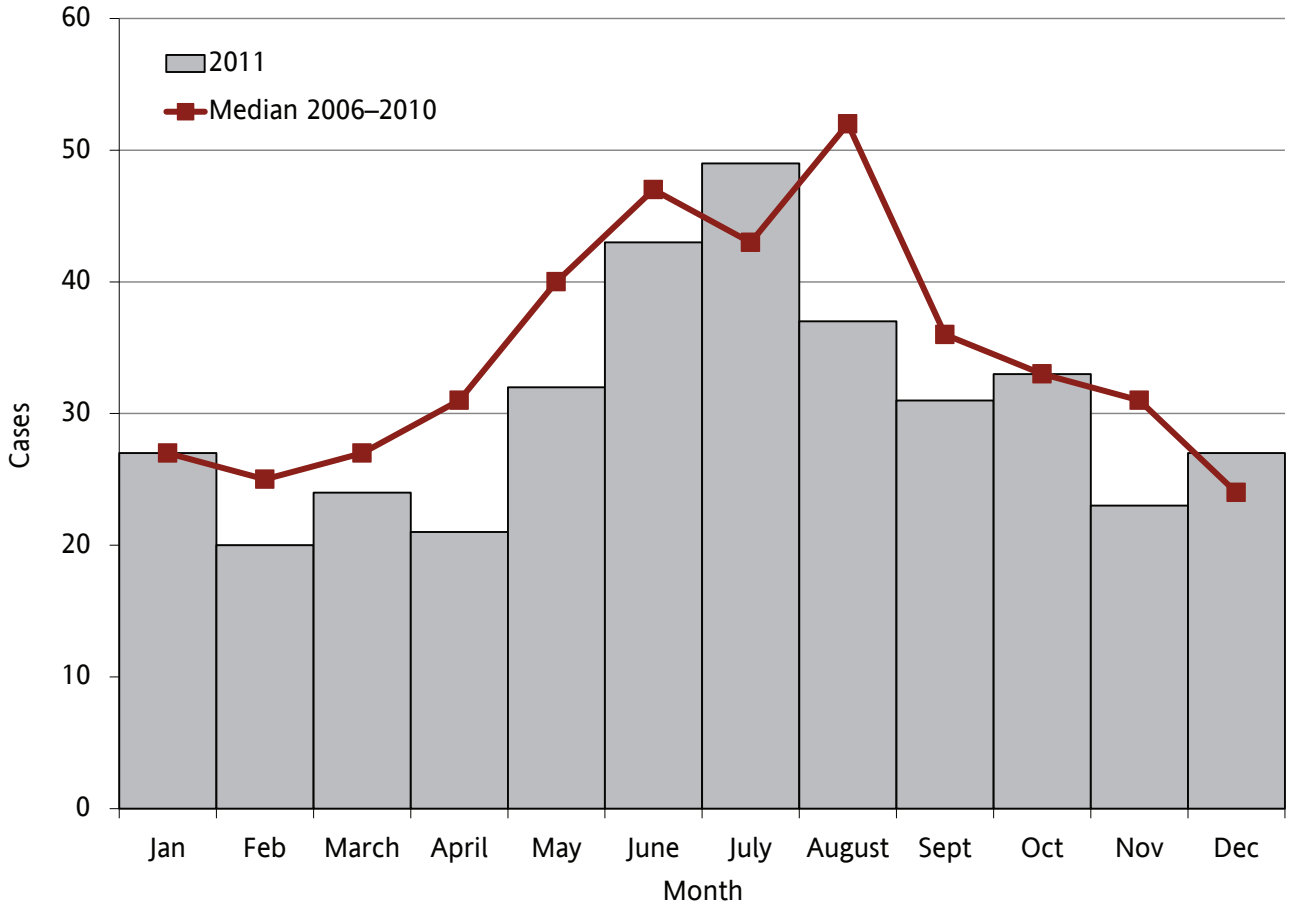
Of approximately 2,500 known serotypes, only about 200 are detected in the United States in any given year. In Oregon, *S.* Enteritidis and *S.* Typhimurium are the two most commonly reported serotypes, comprising 19% and 14% of all lab-confirmed isolates in 2011, respectively.

The number of reported salmonellosis cases dropped sharply in 2011: 373 cases were logged, down from 517 in 2010 and 441 in 2009. The number of outbreaks involving Oregonians fell from 21 to 12. Most of these were small; the number of lab confirmed cases that were Oregon residents ranged from one to seven. Four outbreaks involved commercial products with cases in multiple states: two from baby chicks, one from Cargill ground turkey, and one from Del Monte fresh cantaloupe.

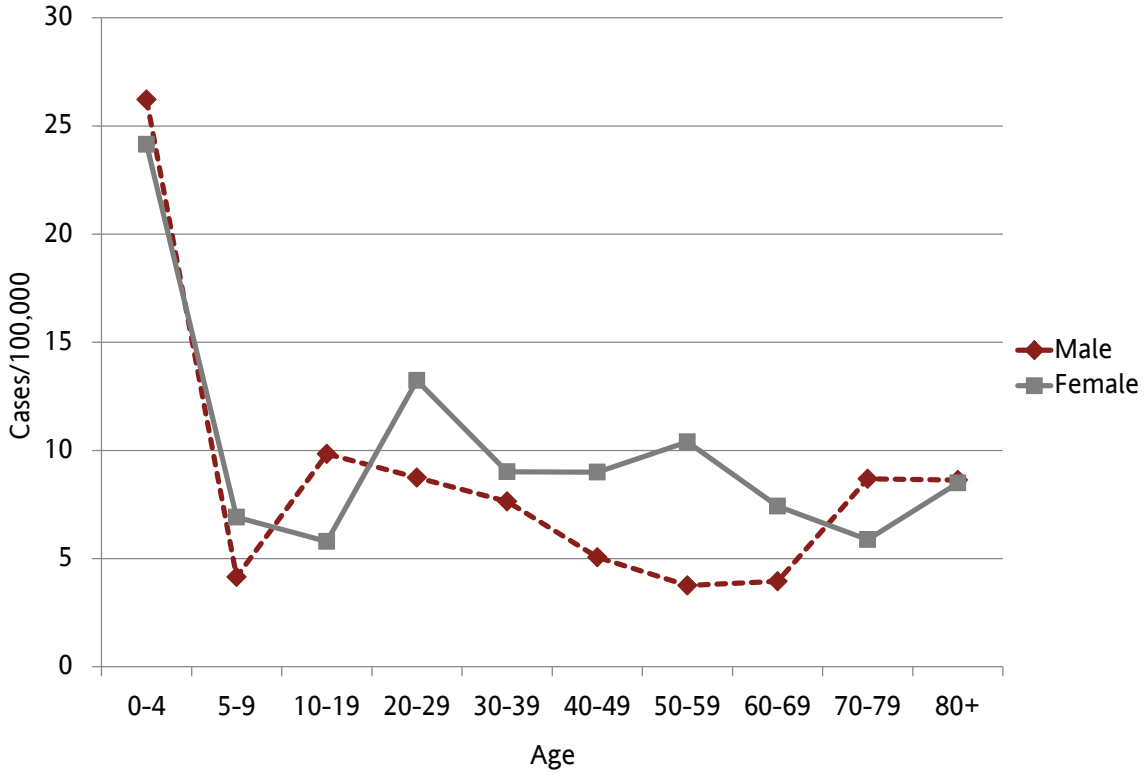
## Salmonellosis by year: Oregon, 1988–2011



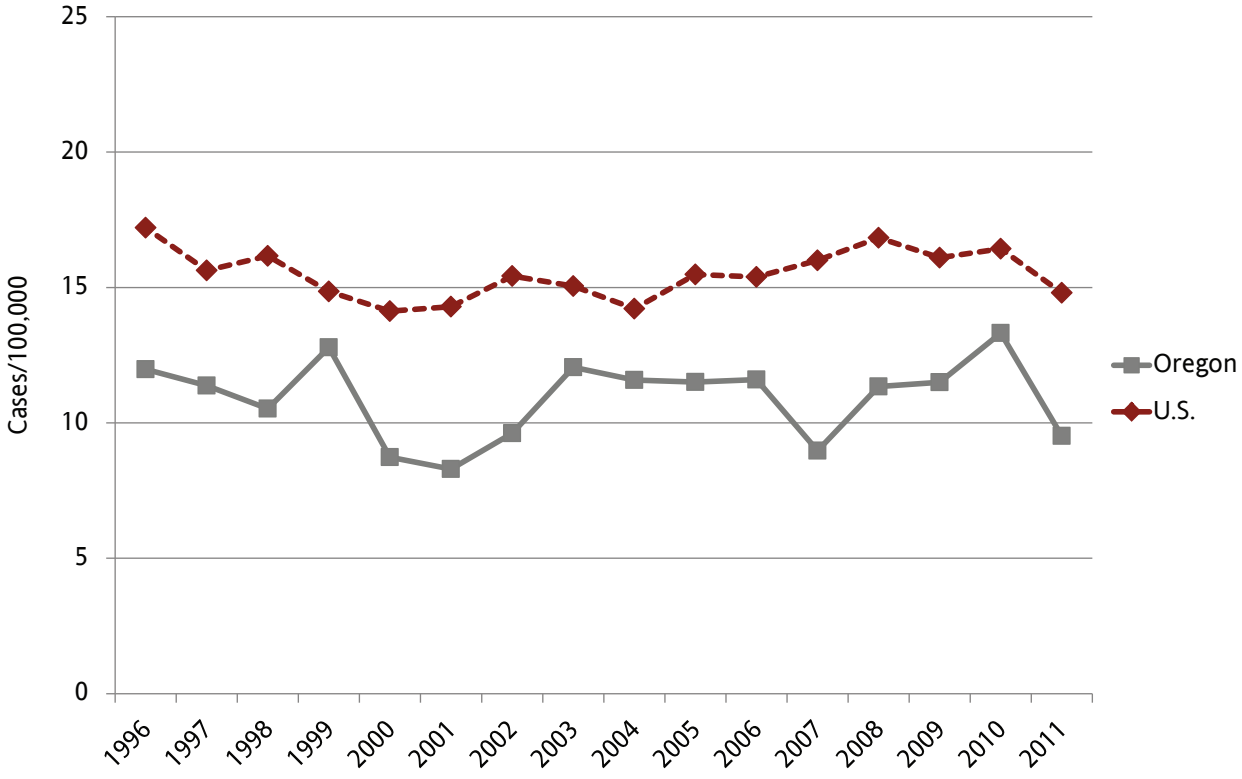

## Salmonellosis by onset month: Oregon, 2011



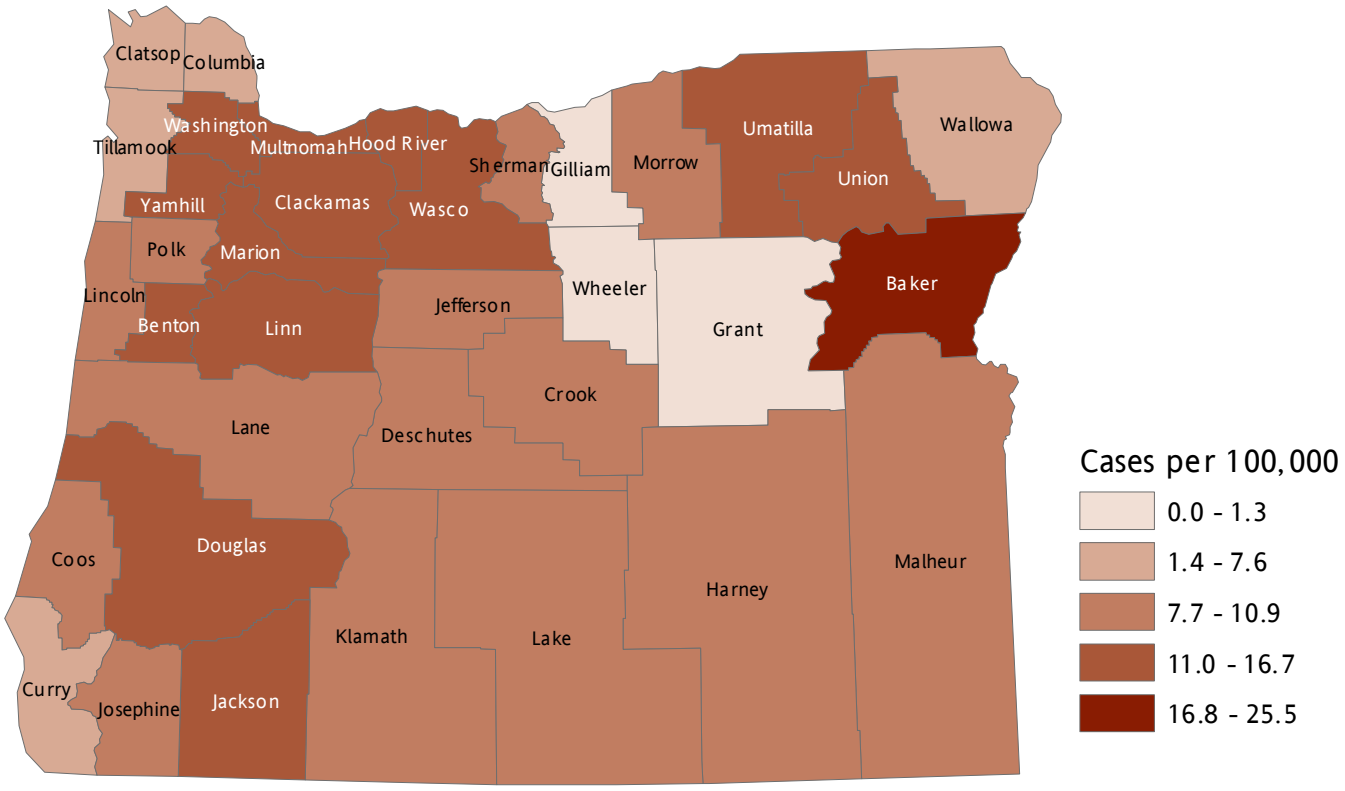
## Incidence of salmonellosis by age and sex: Oregon, 2011




## Incidence of salmonellosis: Oregon vs. nationwide, 1996–2011



## Incidence of salmonellosis by county of residence: Oregon, 2002–2011




## Selected* *Salmonella* by serotype, Oregon, 2002–2011

| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|
| Braenderup | 4 | 1 | 2 | 1 | 11 | 8 | 1 | 21 | 36 | 9 |
| Enteritidis | 43 | 78 | 64 | 86 | 74 | 54 | 76 | 61 | 123 | 67 |
| Heidelberg | 27 | 12 | 42 | 51 | 19 | 26 | 23 | 44 | 28 | 13 |
| Infantis | 1 | 2 | 10 | 5 | 7 | 5 | 8 | 9 | 9 | 13 |
| Montevideo | 17 | 16 | 15 | 15 | 13 | 12 | 15 | 22 | 12 | 17 |
| Muenchen | 10 | 5 | 7 | 8 | 8 | 9 | 9 | 10 | 10 | 5 |
| Newport | 31 | 38 | 14 | 17 | 16 | 17 | 15 | 15 | 24 | 13 |
| Oranienburg | 12 | 13 | 6 | 8 | 5 | 8 | 8 | 6 | 8 | 11 |
| Saintpaul | 18 | 36 | 16 | 7 | 10 | 3 | 23 | 10 | 13 | 8 |
| Thompson | 1 | 2 | 1 | 6 | 9 | 4 | 7 | 12 | 14 | 14 |
| Typhimurium | 67 | 83 | 86 | 84 | 90 | 52 | 65 | 81 | 40 | 32 |

*Selected because at least one case was reported in 2011 and it is a more common serotype.

# Sexually transmitted diseases

## Chlamydiosis

Chlamydiosis (i.e., chlamydia) is primarily a sexually-transmitted infection caused by *Chlamydia trachomatis*. The majority of infections lack symptoms and can persist unrecognized for months. Symptoms commonly include painful urination, vaginal discharge, and pelvic pain, among others. Untreated Chlamydia infection in women can cause pelvic inflammatory disease (PID) and infertility or tubal pregnancy. If detected, chlamydiosis can be treated successfully with antibiotics, preventing transmission to partners and preventing long-term health consequences. Unlike gonorrhea, resistance to antibiotics has not been a problem with chlamydial infections.

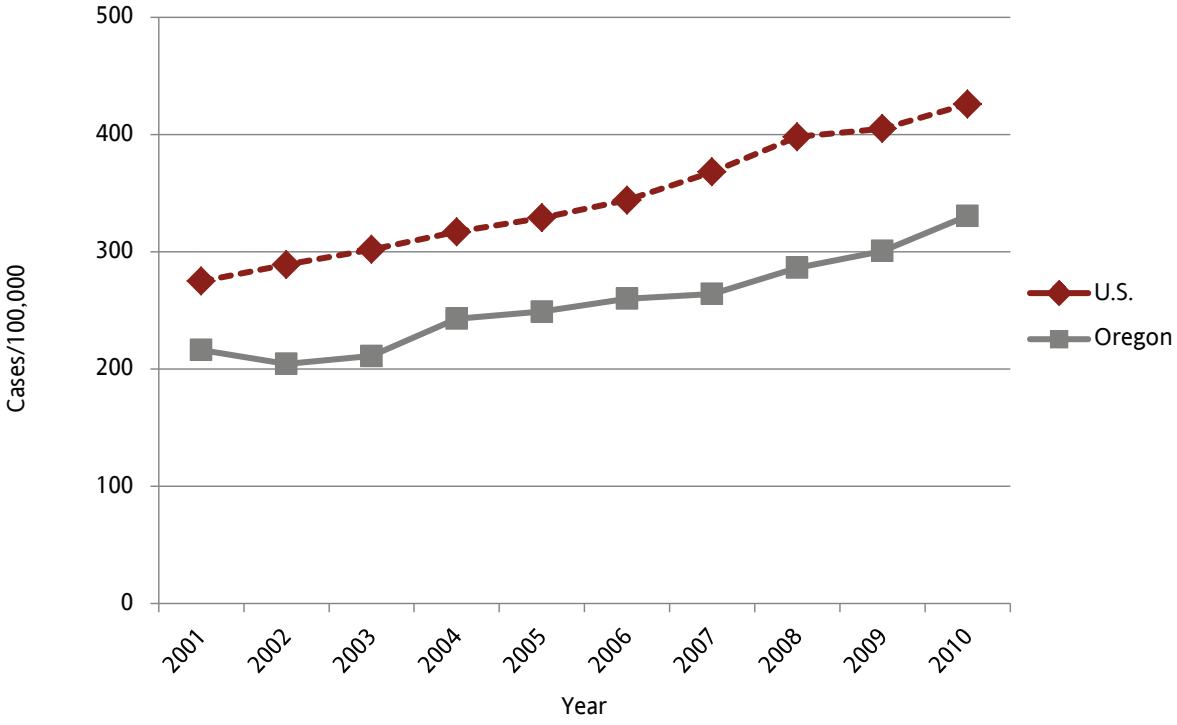
In Oregon, law requires health care providers and laboratories to report cases of Chlamydia infection to the local health department. This occurs primarily through automatic electronic reporting by laboratories. Due to lack of resources, with some local exceptions, public health investigation of reported chlamydial infections, and efforts to provide assistance with partner notification and treatment have become rare.

The Infertility Prevention Program (IPP), sponsored by the federal Centers for Disease Control and Prevention (CDC) through grants to the Oregon Health Authority, supports screening and treatment of chlamydial infections for more than 50,000 young women and men in more than 100 clinics around Oregon each year. Approximately 5,000 reported Oregon cases are identified and treated in IPP clinics annually. The Oregon Health Authority and local public health authorities use IPP data to help direct Chlamydia control efforts to locations and activities that are most likely to be effective.

**Epidemiology**

During 2011, 13,691 cases of chlamydiosis were reported in Oregon residents (approximately 375/100,000). Chlamydial infections occurred in residents of every Oregon county but one during 2011 with the highest rates found in Jefferson (612/100,000)*, Multnomah (542/100,000) and Marion (475/100,000) counties. While the number of Oregon cases has increased steadily during the past 10 years, Oregon's rate remains below the United States. (Figure 1).

Figure 1. Incidence of reported chlamydial infection by year, Oregon and the United States, 2001–2010




Reported rates of chlamydiosis are twice as high in women compared to men, probably a result of current guidelines that recommend asymptomatic screening in women, but not in men.[1] By age, the highest rates in both women and men are among 15- to 24-year-olds (Figure 2). Chlamydia infection rates are higher in blacks and African Americans (834/100,000) and Hispanics (391/100,000) than whites (226/100,000) (Figure 3).

Figure 2. Incidence of reported chlamydial infection by age group and by sex, Oregon, 2011

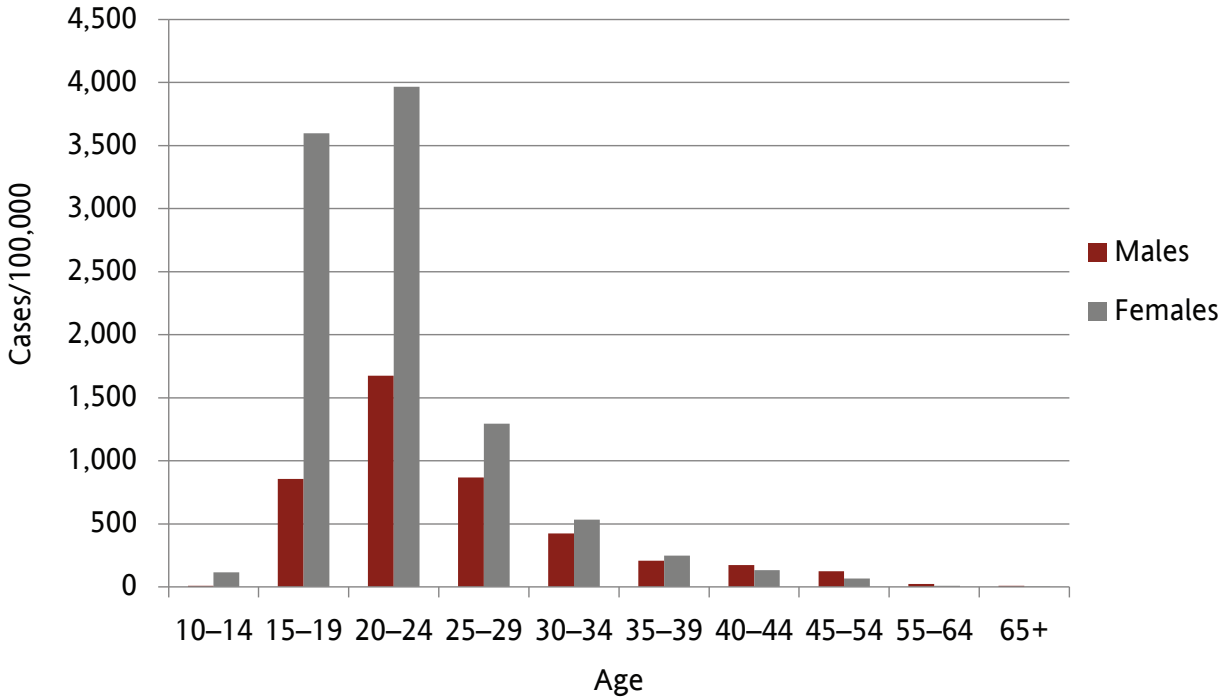
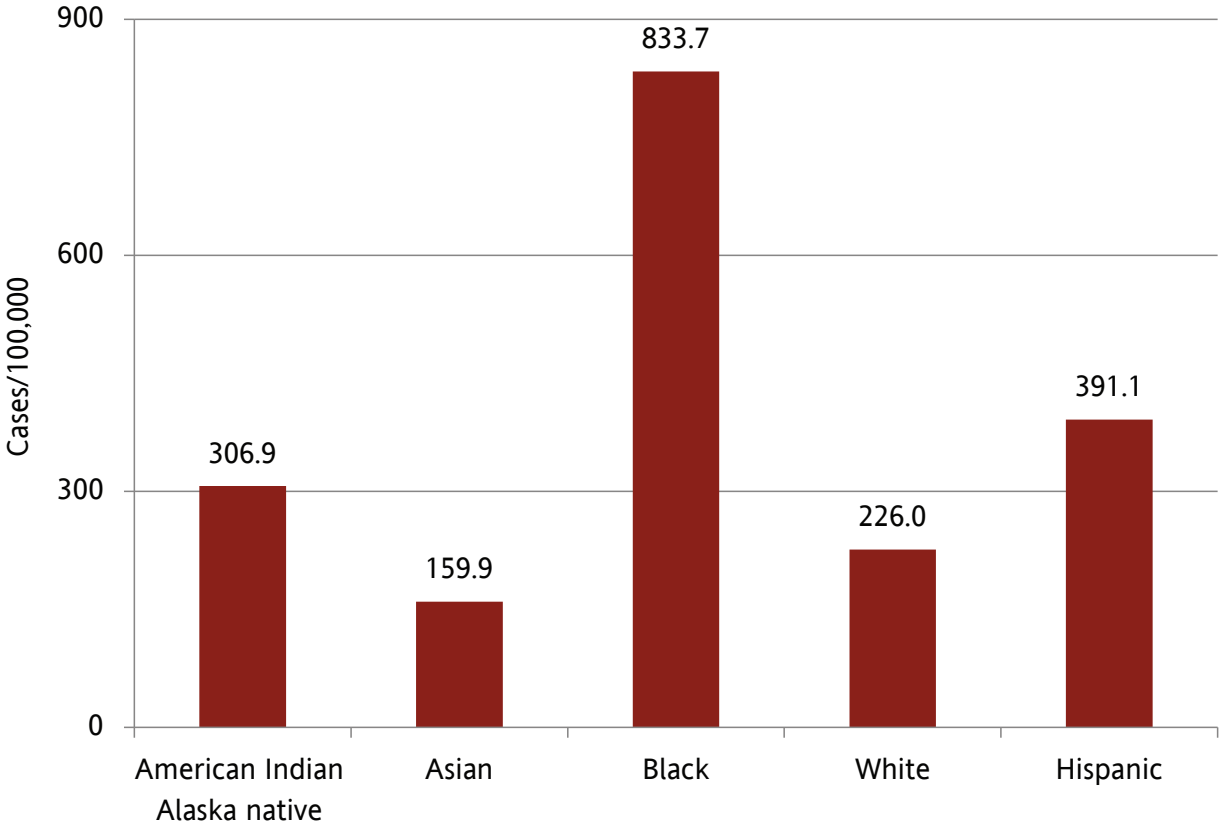



Figure 3. Incidence of reported chlamydial infection by race and ethnicity, Oregon, 2011



**Prevention**

Primary prevention strategies aim to prevent a person from becoming infected in the first place by:

- Delaying age at onset of intercourse;
- Decreasing the number of sex partners; and
- Increasing condom use.

Rapid identification and treatment of new cases can also be considered primary prevention when it results in averting transmission to a sex partner.

Secondary prevention strategies aim to eradicate existing infections by:

- Treating asymptomatic chlamydial infections;
- Treating sex partners of people who have chlamydiosis; and
- Retesting people with recent chlamydiosis.

In recent years, urine testing with nucleic acid amplification tests have made screening for Chlamydia more convenient and more sensitive.

The CDC-funded IPP sponsors systematic screening in school-based clinics, job corps, vocational training, jails and detention centers, health care settings and family planning centers with a test positivity of ≥3%.

**Sources**

Data source for graphics: Oregon Public Health Division statewide mandatory reporting of chlamydia cases: http://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/DiseaseSurveillanceData/Pages/annrep.aspx.

1. U.S. Preventive Services Task Force. Screening for chlamydial infection recommendations and rationale. American Journal of Preventive Medicine. 2001;20 (3s): 90–94.

## Gonorrhea

### Background

Gonorrhea is primarily a sexually transmitted bacterial infection affecting the genital tract, rectum, and mouth and throat of men and women. Women are more likely to become infected with gonorrhea after exposure, but less likely than men to develop symptoms after infection. The proportion of infections that are symptomatic among women ranges from 20% to as high as 75% of infections, but ≥95% of men with gonorrhea are symptomatic. Local symptoms of gonorrhea infection among women include painful urination, painful menses and pelvic pain, or discharge from the vagina and cervix or from the rectum. Men usually experience painful urination and discharge from the penis. Local complications among men include epididymitis and prostatitis. Both men and women who acquire gonorrhea through oral sex can experience sore throat and discharge. Gonorrhea can also be transmitted from mother to infant during childbirth, causing eye infections and sometimes disseminated infection.

Gonorrhea can cause serious complications, including pelvic inflammatory disease that sometimes leads to infertility or tubal pregnancy in women. Disseminated infections can cause arthritis and blisters on the skin in either sex, but such infections are exceedingly rare. Untreated gonorrhea during pregnancy can cause premature delivery. Sometimes symptoms caused by gonorrhea can be difficult to differentiate from those caused by chlamydial infection. Simultaneous gonorrheal and chlamydial infections are not uncommon.

In Oregon, state law requires health providers and laboratories to report cases of gonorrhea to the local health department. To the extent their resources allow, local public health personnel interview people with reported cases to assure that they have received treatment, and to assist with notification and treatment of sexual partners.

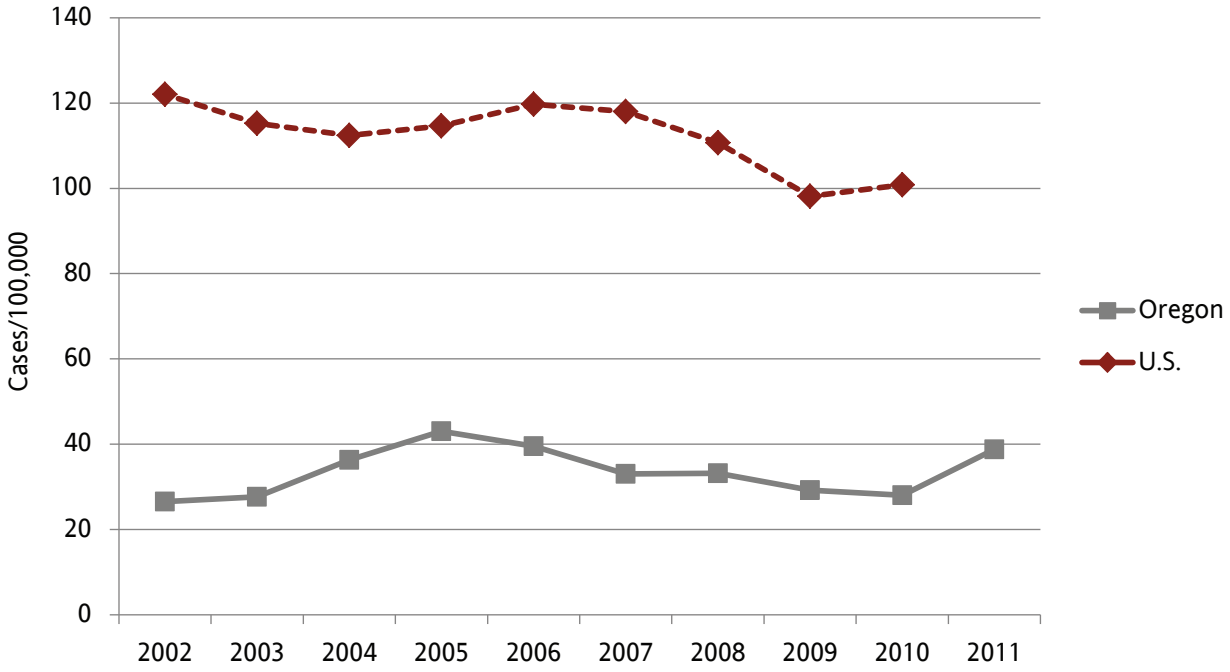
### Treatment

Usually, gonorrhea can be treated successfully with antibiotics, preventing transmission to partners and long-term health consequences. Unfortunately, resistance to antibiotics tends to appear rapidly among circulating strains of *Neisseria gonorrheae* (the bacterium). Since 2007, the only class of antibiotics that has reliably been effective against gonorrhea is the cephalosporins, and within the past year or two, microbiologists have begun to notice diminished susceptibility to cephalosporins in the laboratory. In Asia, but not yet in the United States, some cases have occurred in which treatment with cephalosporins was not effective. Unfortunately, no clear alternative to cephalosporins exists for routine treatment of gonorrhea.

### Epidemiology

During 2011, 1,490 cases of gonorrhea were reported in Oregon residents (39/100,000 residents). Rates in men (47/100,000) exceeded rates among women (31/100,000). Among counties with five or more reported cases, the rate was highest in Multnomah County (122/100,000 residents). Rates have fluctuated in the range of 25 to 45/100,000 residents since 2002 and remain well below the United States (101/100,000 residents during 2010) (Figure 1).

Figure 1. Incidence of gonorrhea by year, Oregon and the United States, 2002–2011




Note: Rates for the U.S. are only available through 2010.

By age, the highest rates of reported gonorrhea occur among young men and women aged 20–24 years. After age 24 years, reported rates of gonorrhea in men exceed rates among women (Figure 2) and remain above 50 cases per 100,000 men through age 44 years. Among men, rates rise again among those aged 40–44 years. Many of these cases occur among those who acknowledge sex with other men; during 2011at least 35% of cases occurred among men who acknowledged sex with other men. By race and ethnicity, African Americans were much more likely to have a reported case of gonorrhea (391/100,000 residents) than whites or Hispanics, or people of other races (<35/100,000 residents) (Figure 3).

A disproportionate number of gonorrhea cases occur in men who are infected with HIV. During 2006–2011, annual rates of gonorrhea among men with HIV have been ≥30 times higher than the rate among the general population; approximately 70 cases of gonorrhea each year occur in men who have HIV.

Figure 2. Incidence of gonorrhea by age and sex: Oregon, 2011

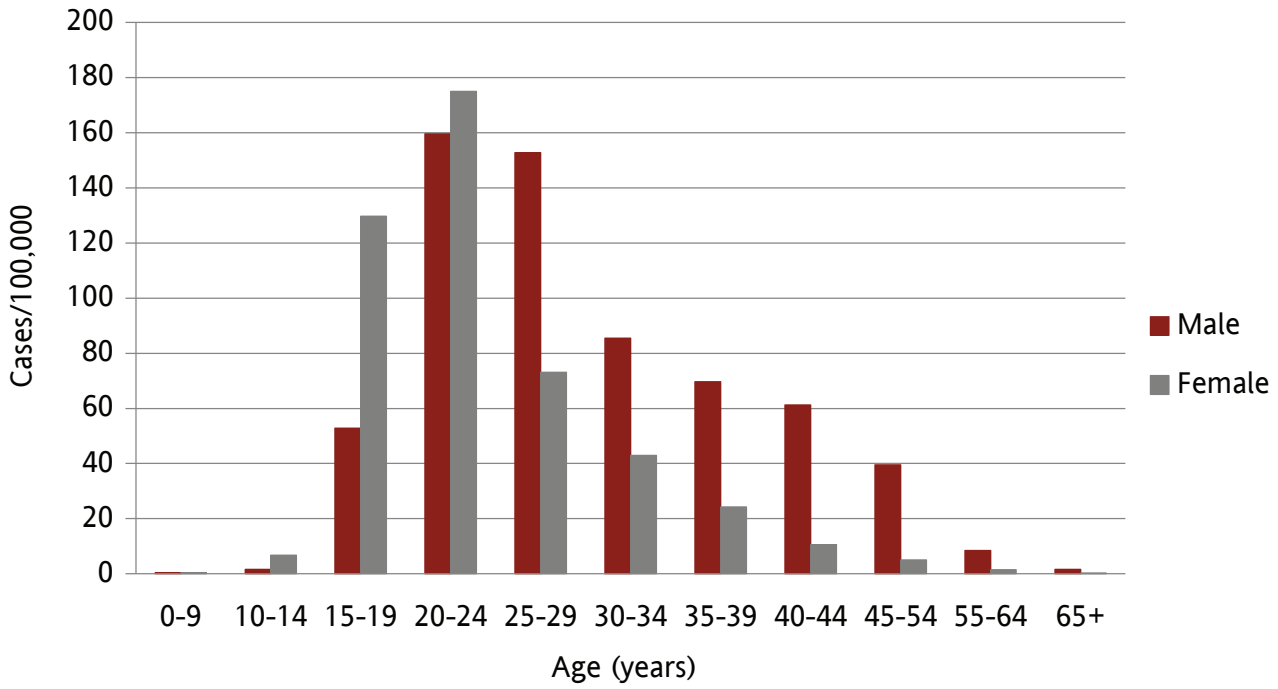
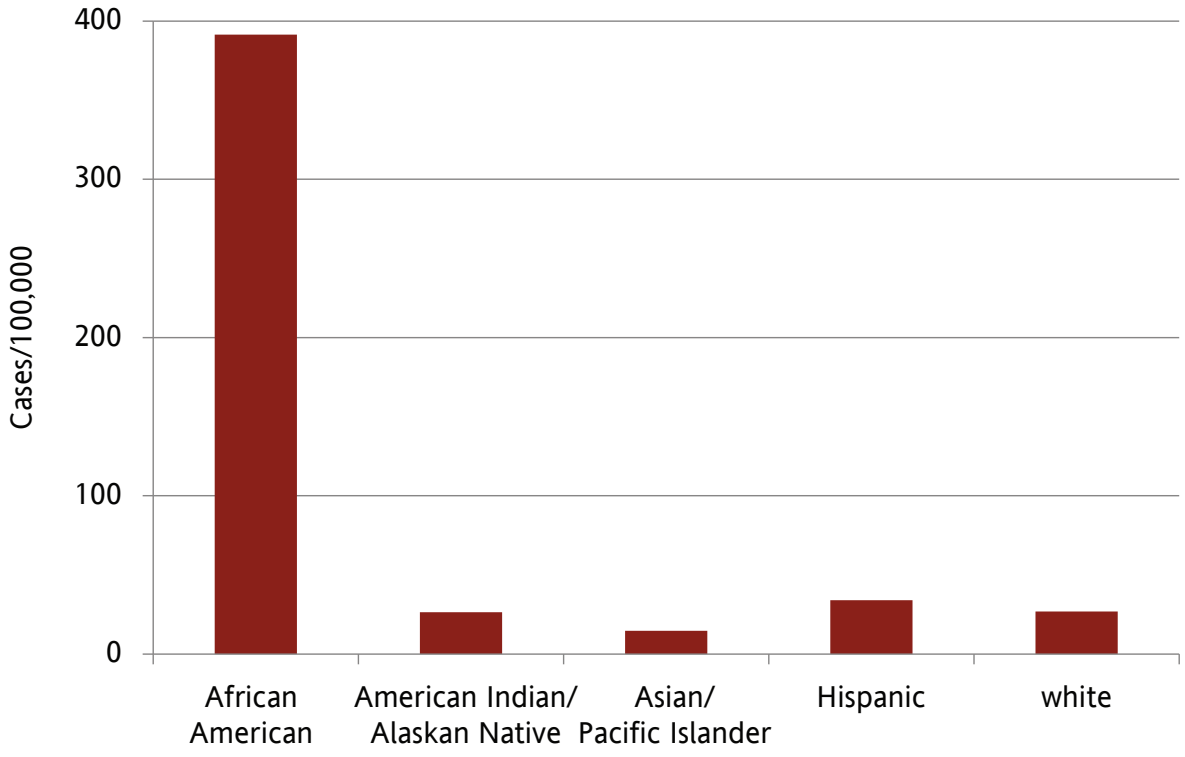



Figure 3. Incidence of gonorrhea by race and ethnicity, Oregon, 2011



**Prevention**

Primary prevention strategies aim to prevent a person from becoming infected in the first place by:

- Delaying age at onset of intercourse;
- Decreasing the number of sex partners; and
- Increasing condom use.

Rapid identification and treatment of new cases can also be considered primary prevention when it results in averting transmission to a sex partner.

Secondary prevention strategies aim to eradicate existing infections by:

- Treating asymptomatic gonorrhea cases; and
- Treating sex partners of people with gonorrhea.

**Screening**

In recent years, urine testing with nucleic acid amplification tests (NAATs) has made screening for gonorrhea much more convenient for clinicians and for patients. The use of NAATs, frequently testing simultaneously for Chlamydia and gonorrhea, has all but eclipsed culture for screening and diagnostic testing of gonorrhea. NAATs are very convenient and accurate. However, an unintended consequence may be the loss of laboratory capacity to culture *Neisseria gonorrheae* and test readily for susceptibility to antibiotics; this testing might become needed again if *N. gonorrheae* should become widely resistant to cephalosporins.

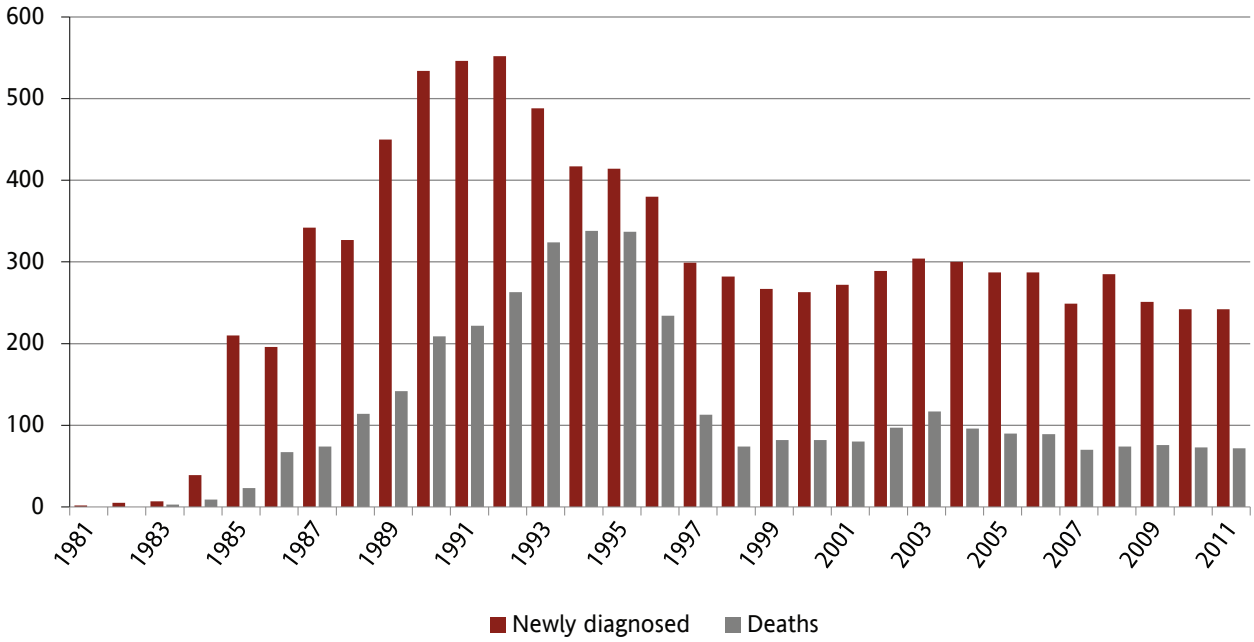
Centers for Disease Control and Prevention (CDC) and U.S. Preventive Services Task Force (USPSTF) guidance on screening for asymptomatic infections recommend that clinicians provide gonorrhea screenings for all sexually active women under the age of 25 years, including those who are pregnant, if they have the following specific risk factors for infection: a history of previous gonorrhea or other sexually transmitted infection, new or multiple sexual partners, inconsistent condom use, sex work, or drug use. Broader screening is recommended for those people in Oregon with a higher incidence of infection than the general population. These groups include Multnomah County residents, African Americans and other blacks, and men who have sex with men.

## HIV infection

### Introduction

HIV/AIDS remains an important public health problem in Oregon. From 1981 through 2011, 8,957 Oregonians were diagnosed and reported with HIV infection; approximately 40% have since died (Figure 1). Since 1997, approximately 280 new diagnoses were reported each year in Oregon. The number of Oregon cases* of people living with HIV has continued to increase each year, nearly doubling from 2,736 in 1997 to 5,384 in 2011.

Figure 1. Oregon cases of HIV infection, diagnosis and deaths, 1981–2011

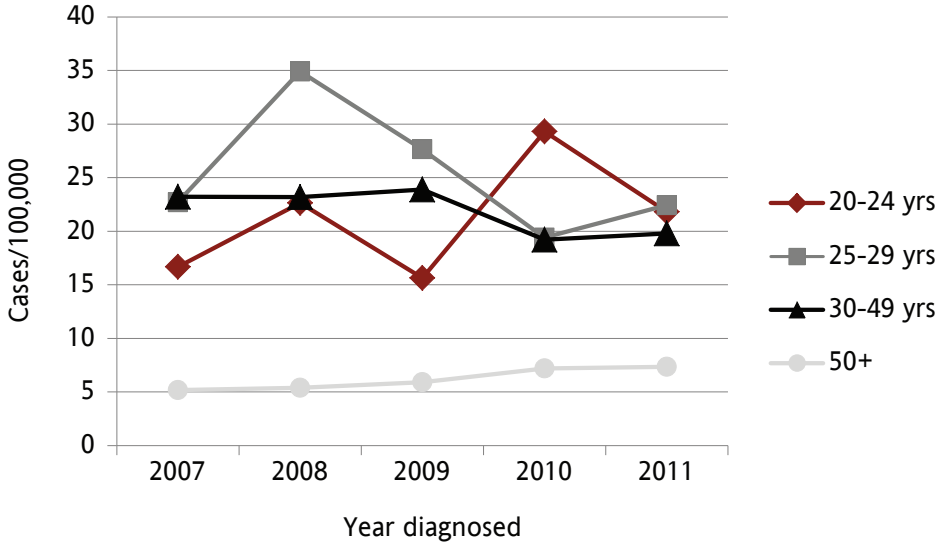



*For this report, a "case" is defined as an Oregon resident diagnosed with HIV/AIDS before being diagnosed in another state. Only those cases reported to the Oregon Health Authority HIV Program were included. People living with HIV in Oregon not counted in this report include those who resided in another state when they were diagnosed and approximately 1,082 who are infected but have yet to be tested (American Indian/Alaskan Native Vol.60, No.21:689-693, Office of Disease Prevention and Epidemiology).

### Recent diagnoses (2007–2011)

Nearly half (48.5%) of those diagnosed with HIV during 2007–2011 were Multnomah County residents. Statewide, men were about seven times more likely than women to be diagnosed with HIV. The average age at diagnosis was 37.4 years (Figure 2), but diagnosis rates increased among males aged 20–24 years during this period.

Figure 2. Age at HIV diagnosis in Oregon, 2007–2011




New diagnosis rates were 3.5 times higher among blacks and African Americans than whites.** The rate of new diagnoses for Hispanics was 1.9 times higher than for white non-Hispanics; other races/ethnicities accounted for roughly 7% of all diagnoses.

Among males, men who have sex with men (MSM) accounted for 70% (873/1,252). Other transmission categories include men who use injection drugs (5%), MSM who also use injection drugs (8%), and men who likely or possibly† acquired their infection from heterosexual transmission (2%). About 9% of recent male diagnoses lacked sufficient information to assign a transmission category.

Among female cases, injection drug users accounted for 21% of cases and women who likely or possibly‡ acquired their infection by heterosexual transmission accounted for two-thirds (68%) of cases. The remainder included cases of maternal-fetal transmission and cases that lacked sufficient information for classification.

*For this report, a "case" is defined as an Oregon resident diagnosed with HIV/AIDS before being diagnosed in another state. Only those cases reported to the Oregon Health Authority HIV Program were included. People living with HIV in Oregon not counted in this report include those who resided in another state when they were diagnosed and approximately 1,082 who are infected but have yet to be tested (American Indian/Alaskan Native Vol.60, No.21:689-693, Office of Disease Prevention and Epidemiology).

**Approximately 40% of black/African American cases are believed to have immigrated to the United States after becoming infected in another country.

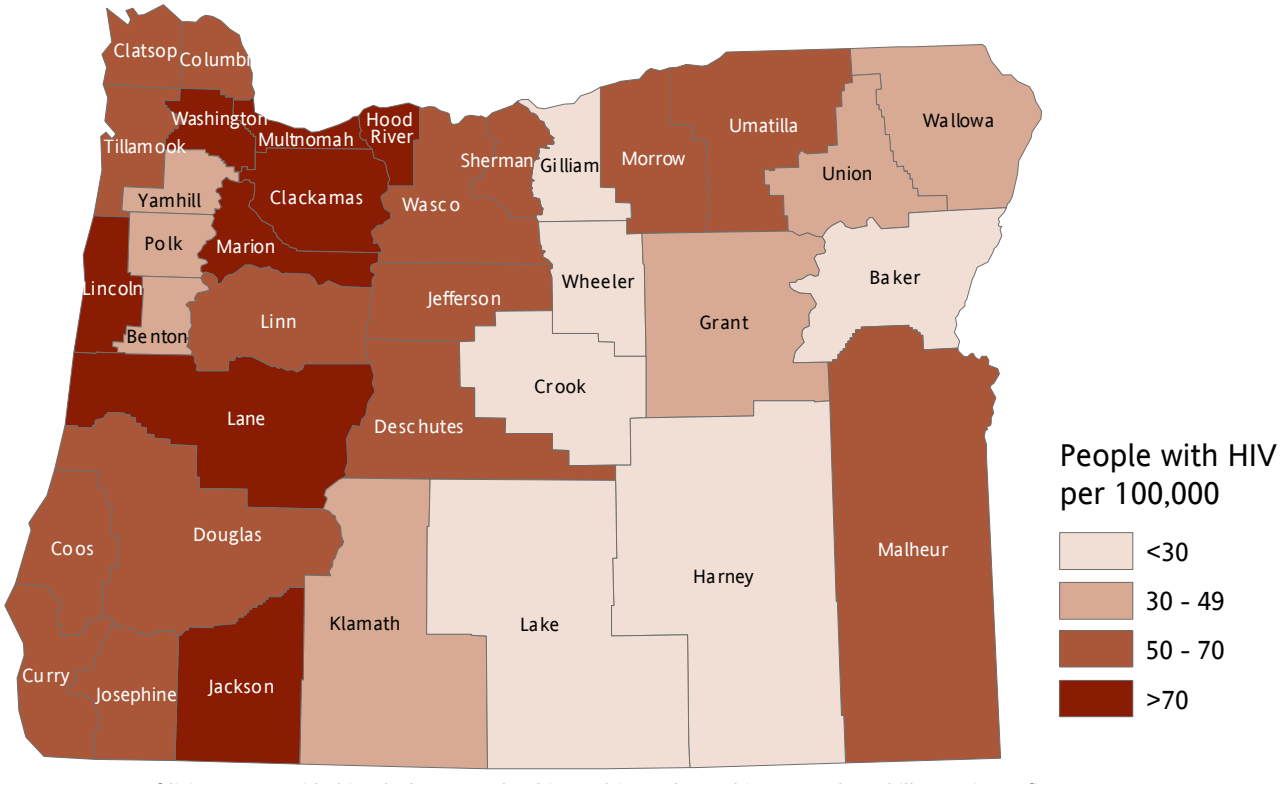
†Includes men who affirmed having sex with women and denied injection drug use, transfusions or transplants during the time they were not being adequately screened for HIV.

‡Includes women who affirmed sex with men and denied injection drug use, sex with men or transfusions or transplants during the time they were not being adequately screened for HIV.

### Oregonians living with HIV/AIDS

As of Dec. 31, 2011, 5,384 Oregonians diagnosed with HIV were believed to be living. Fifty-five percent (2,979/5,384) of those people lived in Multnomah County (Figure 3).

Figure 3. People living with HIV or AIDS by county of residence at diagnosis: Oregon, 2011



## Syphilis

### Background

Syphilis is a sexually transmitted infection characterized by stages that can be separated by extended periods without symptoms.

- *Primary syphilis* usually consists of a solitary sore at the site of inoculation that lasts one to five weeks. Syphilis is most infectious during this period and can be transmitted by direct contact with the primary lesion, ordinarily during sex. Blood tests for syphilis are often not positive until three weeks or more after the exposure (inoculation).
- *Secondary syphilis* does not always follow in every case but when it does, it typically appears approximately four weeks after the sore disappears. It includes general body rash, swollen lymph nodes and focal rashes in moist sites, such as the mouth or vagina. These last one to six weeks then disappear, even without treatment. People with secondary syphilis remain infectious, especially upon contact with mucous patches.
- There are no symptoms during *latent syphilis* infection. Latent syphilis may go undetected for a lifetime or be followed within a few years by outward symptoms of *tertiary* (late) *syphilis*. Blood tests for syphilis are generally positive (reactive) throughout latent infection.
- Between 30% and 40% of untreated people with primary syphilis will develop symptoms of *tertiary* (late) *syphilis* at some point. Late syphilis can cause disabilitites such as dementia, and balance and sensory problems.
- *Fetal infections* acquired while in the womb or during delivery are called *congenital syphilis*. Thanks to syphilis testing during pregnancy, these are rare. Congenital syphilis may cause abortion, stillbirth or neonatal death, in addition to c*hronic disability*.

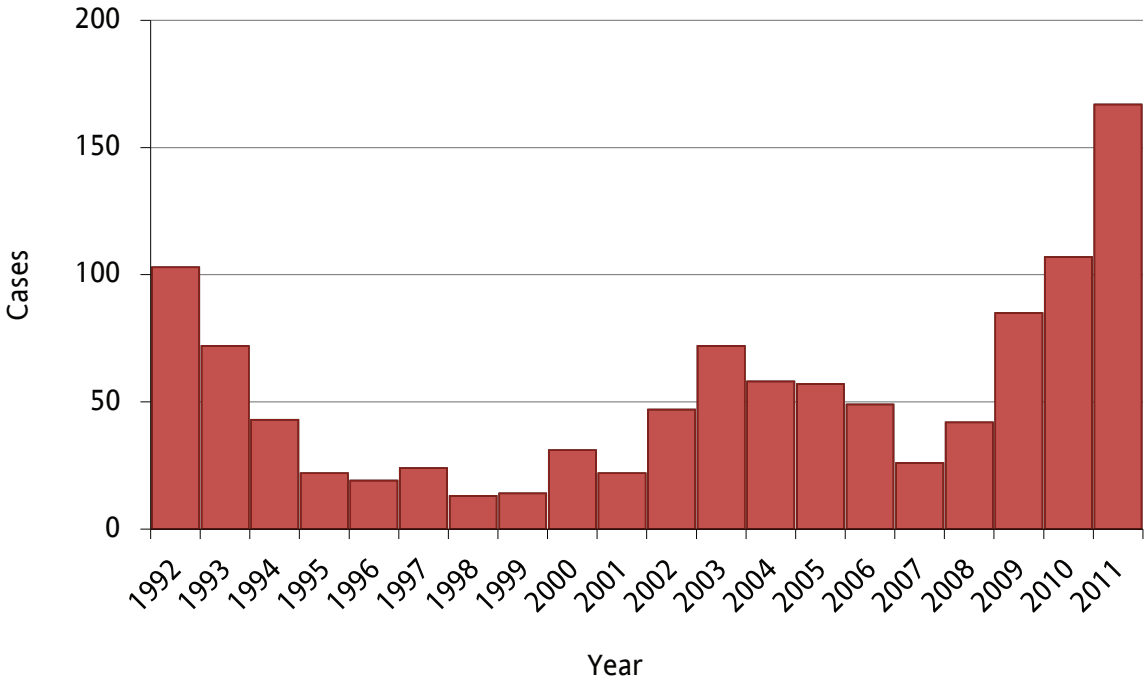
### Treatment

Syphilis infections can be cured with antibiotics. Recent sex partners of people with confirmed primary, secondary or early latent syphilis should receive treatment for syphilis regardless of whether or not they have a positive blood test for syphilis.

### Epidemiology

In Oregon, early syphilis (including primary, secondary and early latent syphilis) cases increased substantially during the past four years to 167 (4.3/100,000) during 2011 after a low of 26 cases (0.7/100,000) during 2007. The 167 cases reported during 2011 in Oregon were more than in any single year since 1991 (Figure 1).

Figure 1. Incidence of syphilis by year, Oregon, 1992–2011




During 2011, elevated rates of early syphilis were observed in men aged 25–44 years, with the highest rate occurring in men aged 40–44 years (22.3/100,000) (Figure 2). During the past decade, almost all cases of early syphilis have occurred among men who have sex with other men. During 2011, at least 129 of 166 men with reported cases of early syphilis reported having had sex with other men and only a single reported case occurred in a woman. During 2011, 46% (48/104) of early syphilis cases occurred in men with HIV (Figure 3). Similarly, relatively high numbers of gonorrhea cases are observed among men who have sex with men, and men with HIV, though numerous gonorrhea cases also occur among women. These trends also are being observed in the rest of the United States. The reasons for the high occurrence of syphilis among men with HIV are not completely understood. Two factors likely contribute. In order to avoid transmitting HIV to HIV-negative partners, some men with HIV select sex partners who are also HIV-positive. Since syphilis is common in this population, they might inadvertently be exposing one another to syphilis. Men with syphilis appear to transmit the infection more easily if they also have HIV, and men who have HIV appear to be more easily infected after exposure to syphilis. For this reason, men with HIV should be encouraged to test regularly for syphilis.

Figure 2. Cases of early syphilis by age group and sex, Oregon, 2011

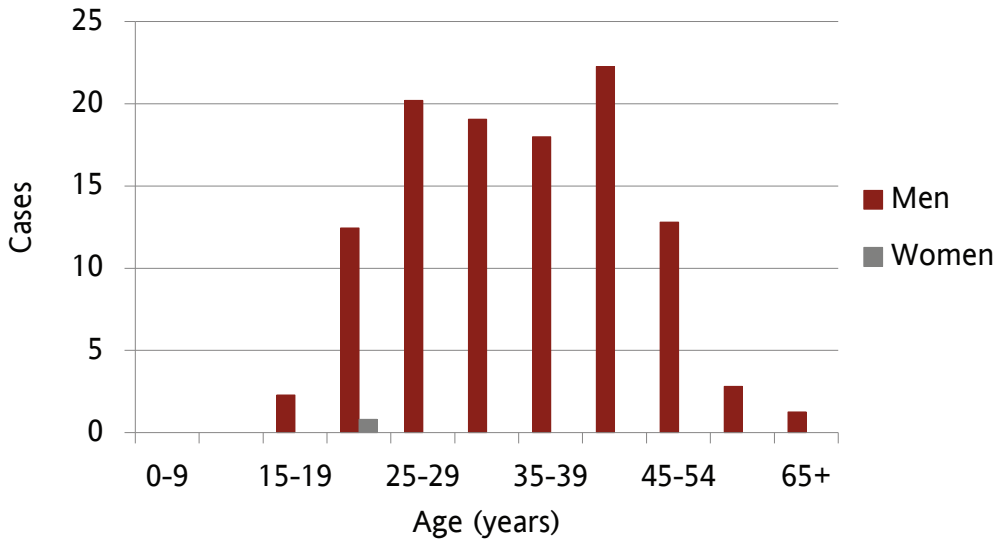
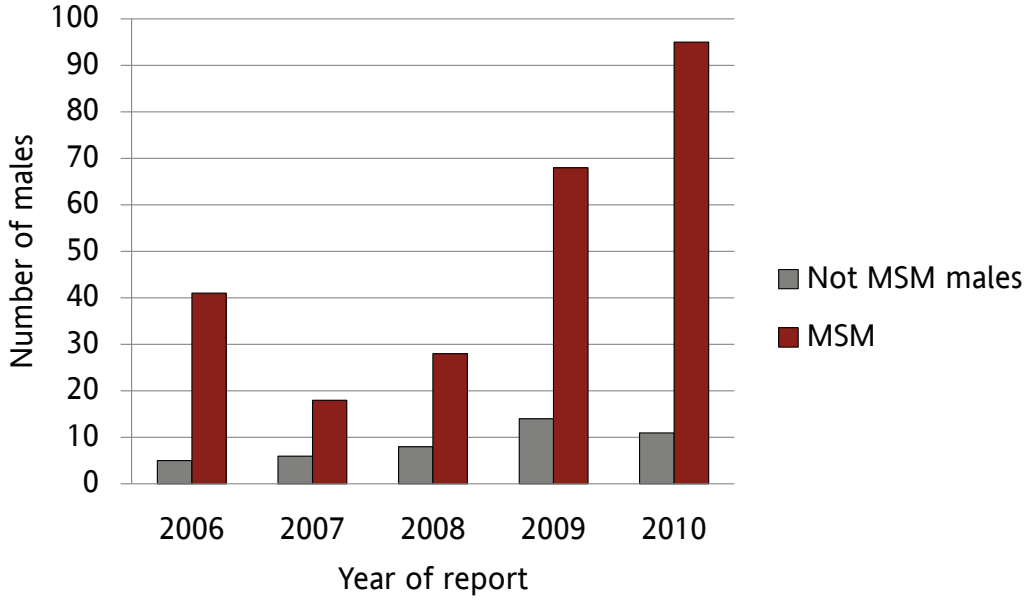
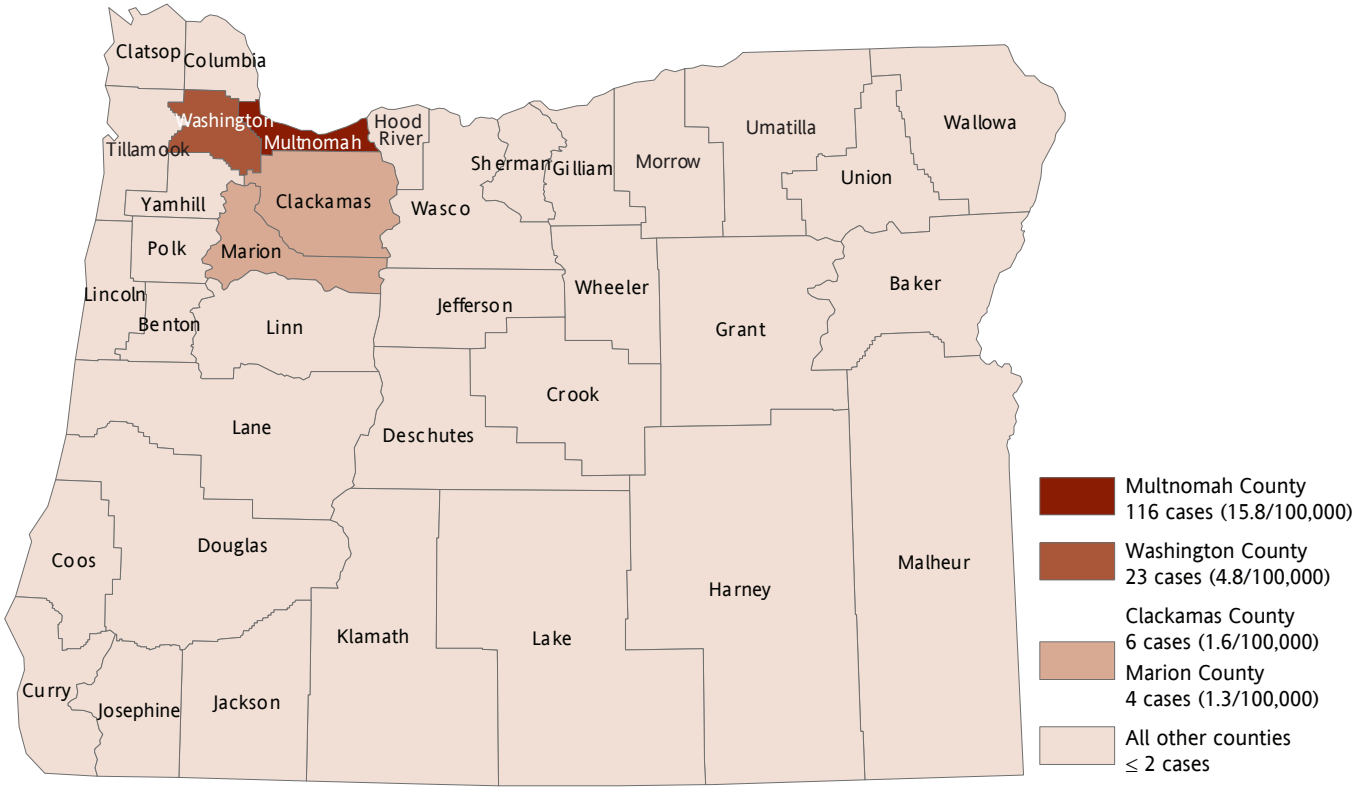



Figure 3. Cases of early syphilis among men, by report of sex with other men (MSM), Oregon, 2006–2010



## Figure 4. Cases and incidence of early syphilis by county, 2011




During 2011, 116 people (15.8/100,000) with reported cases of early syphilis lived in Multnomah County and accounted for 69 percent of all early syphilis in Oregon during the year.

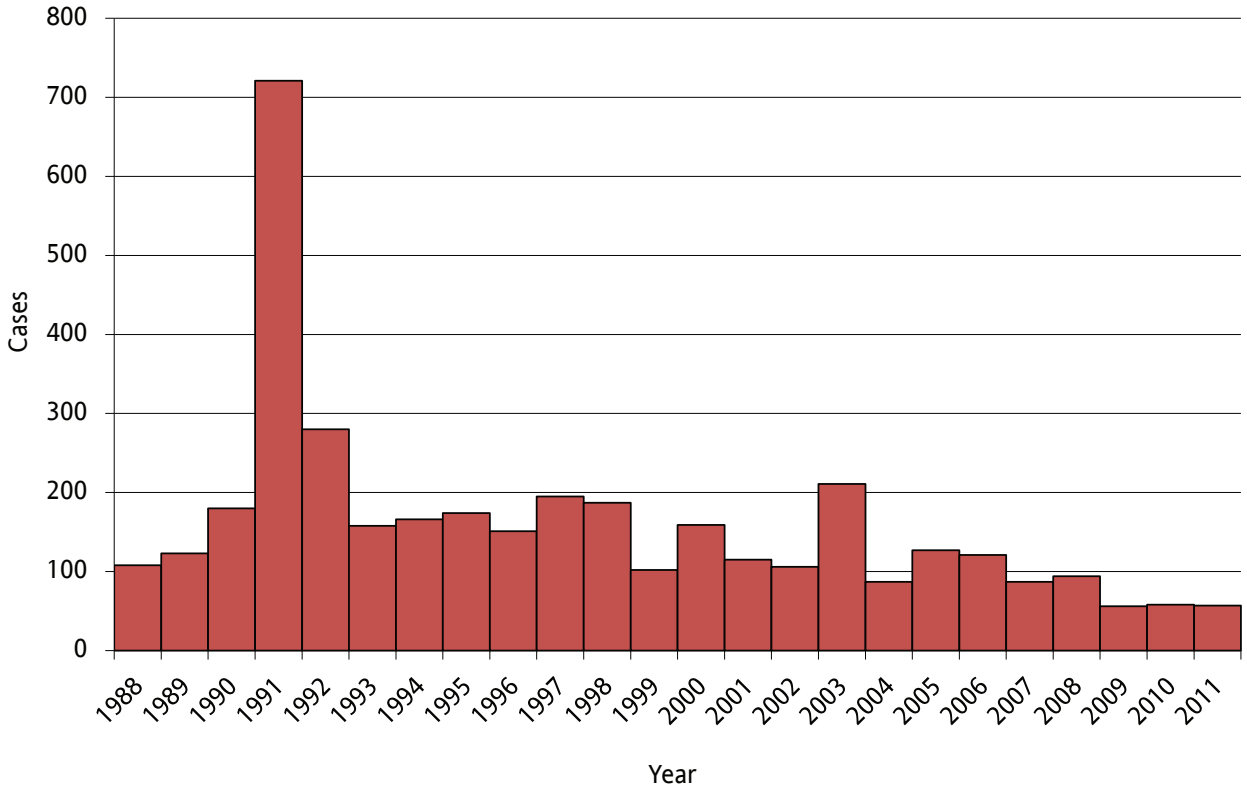
## Shigellosis

Shigellosis is an acute bacterial infection characterized by (sometimes bloody) diarrhea, vomiting, abdominal cramps and, often, fever. Humans are the only known reservoir. Shigellosis is transmitted from person to person, and just a few organisms can cause illness. It is important to track the incidence of this disease to see trends and to detect outbreaks. The rate is higher among children 1–4 years of age. The incidence of shigellosis usually increases in late summer and fall. A large community-wide outbreak in 1991 resulted in hundreds of cases in multiple Portland metropolitan area daycare centers from April onward. At the tail end of that summer, in August, additional cases were associated with a dual pathogen outbreak (*E. coli* and *Shigella*) at Blue Lake Park in Fairview.

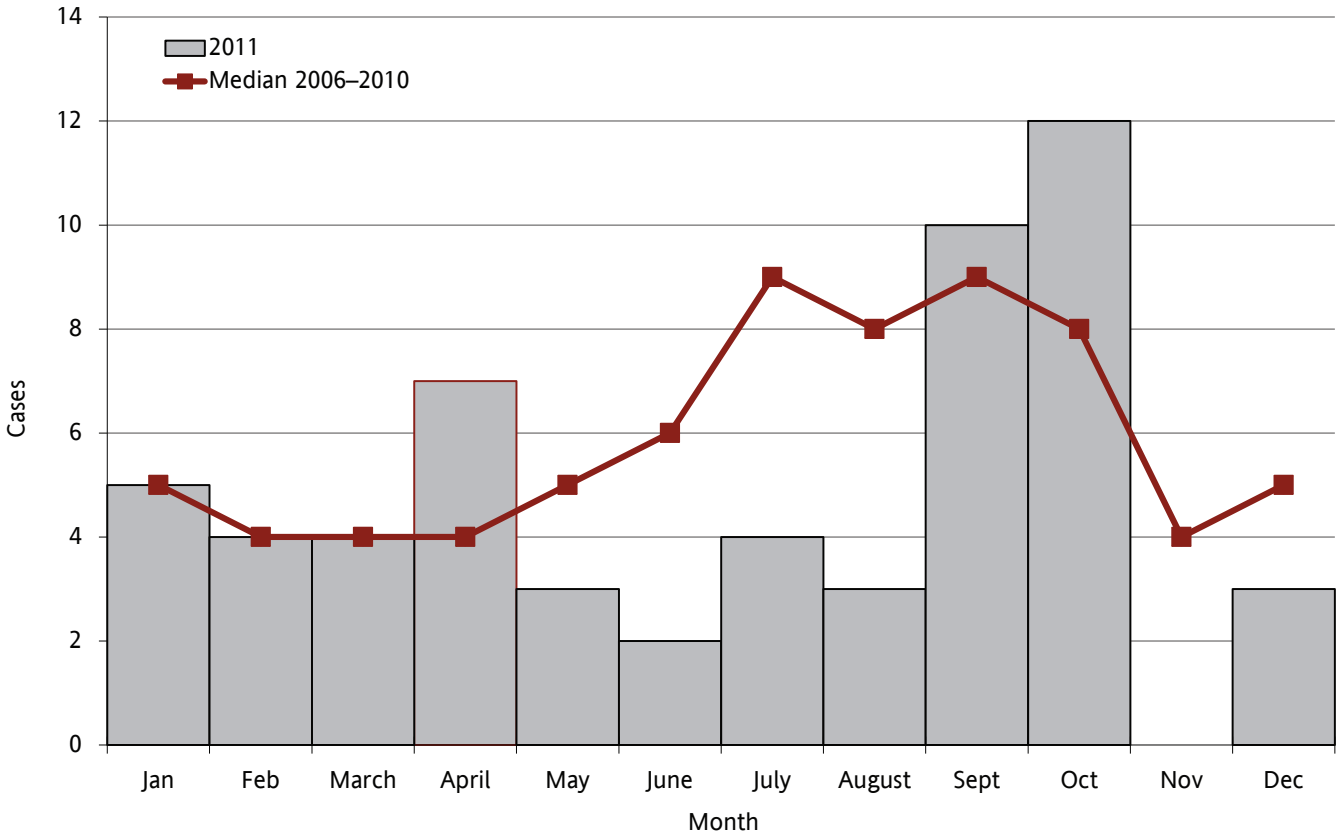
Outbreaks in daycare centers are common, mainly due to the poor hygienic practices of small children. Hand washing is the most important means of prevention. Treatment reduces duration of illness, but the organism has become resistant to many antibiotics used for empiric therapy. Testing for antibiotic susceptibility is important for treatment.

In 2011 there were 57 cases, similar to 2010. Thirty-six were sporadic cases, 14 were household transmission and seven were outbreak-related cases.

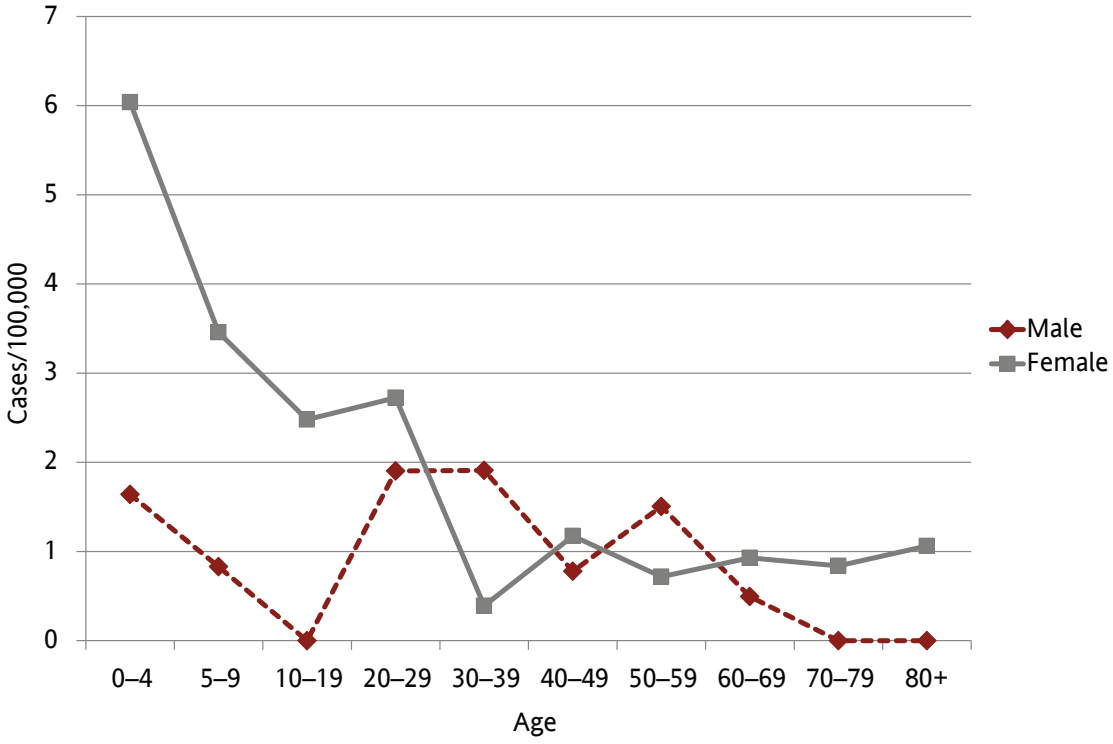
### Shigellosis by year: Oregon, 1988–2011



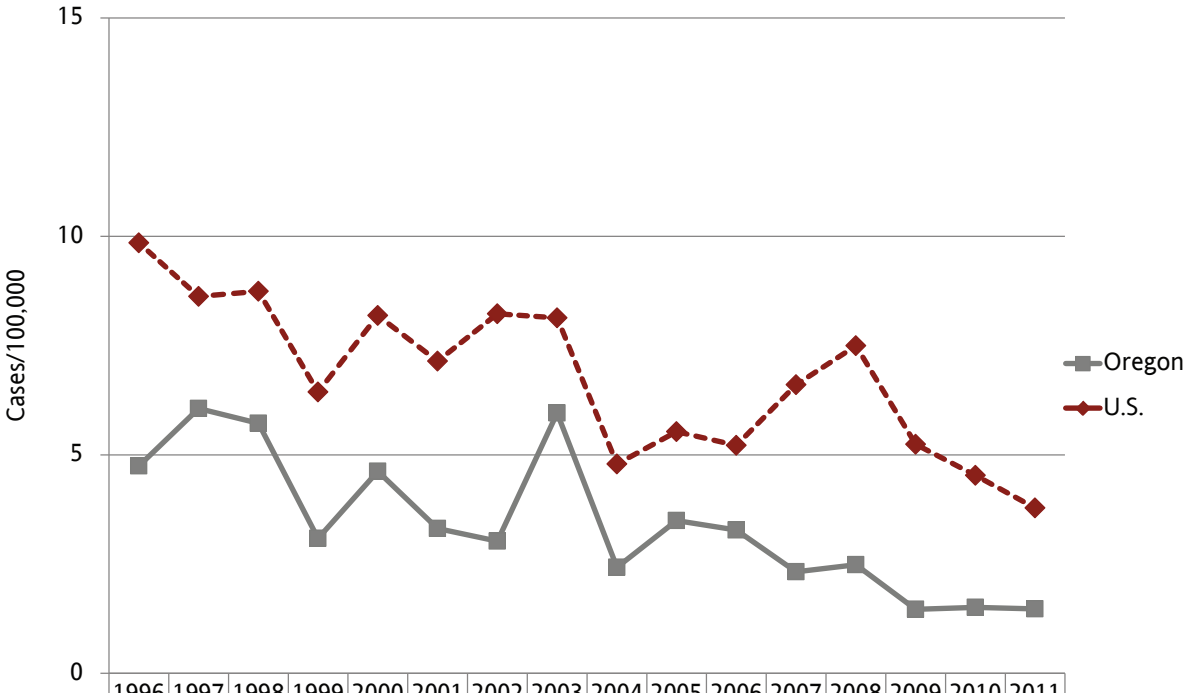
## Shigellosis by onset month: Oregon, 2011




## Incidence of shigellosis by age and sex: Oregon, 2011

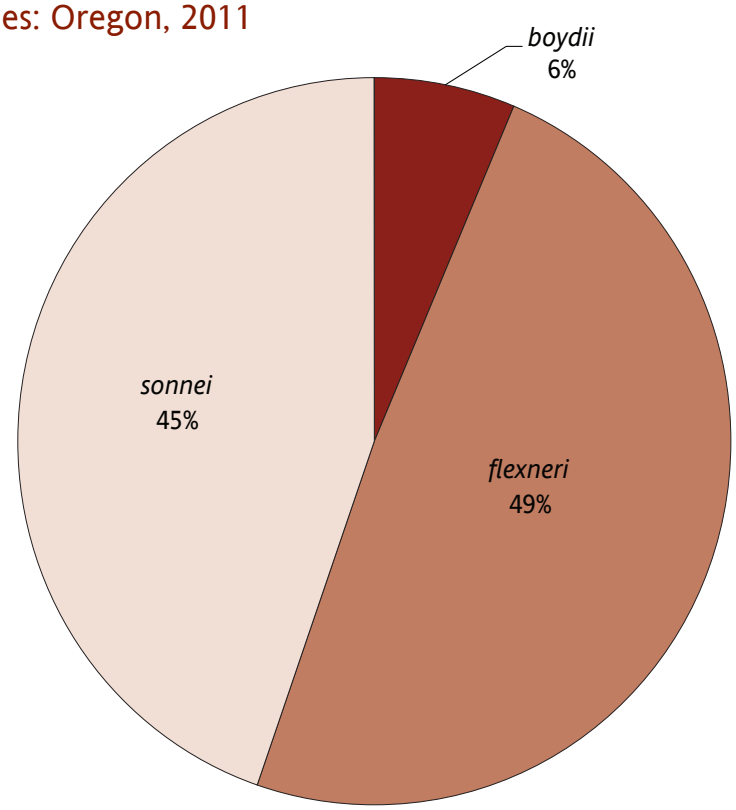


## Incidence of shigellosis: Oregon vs. nationwide, 1996–2011

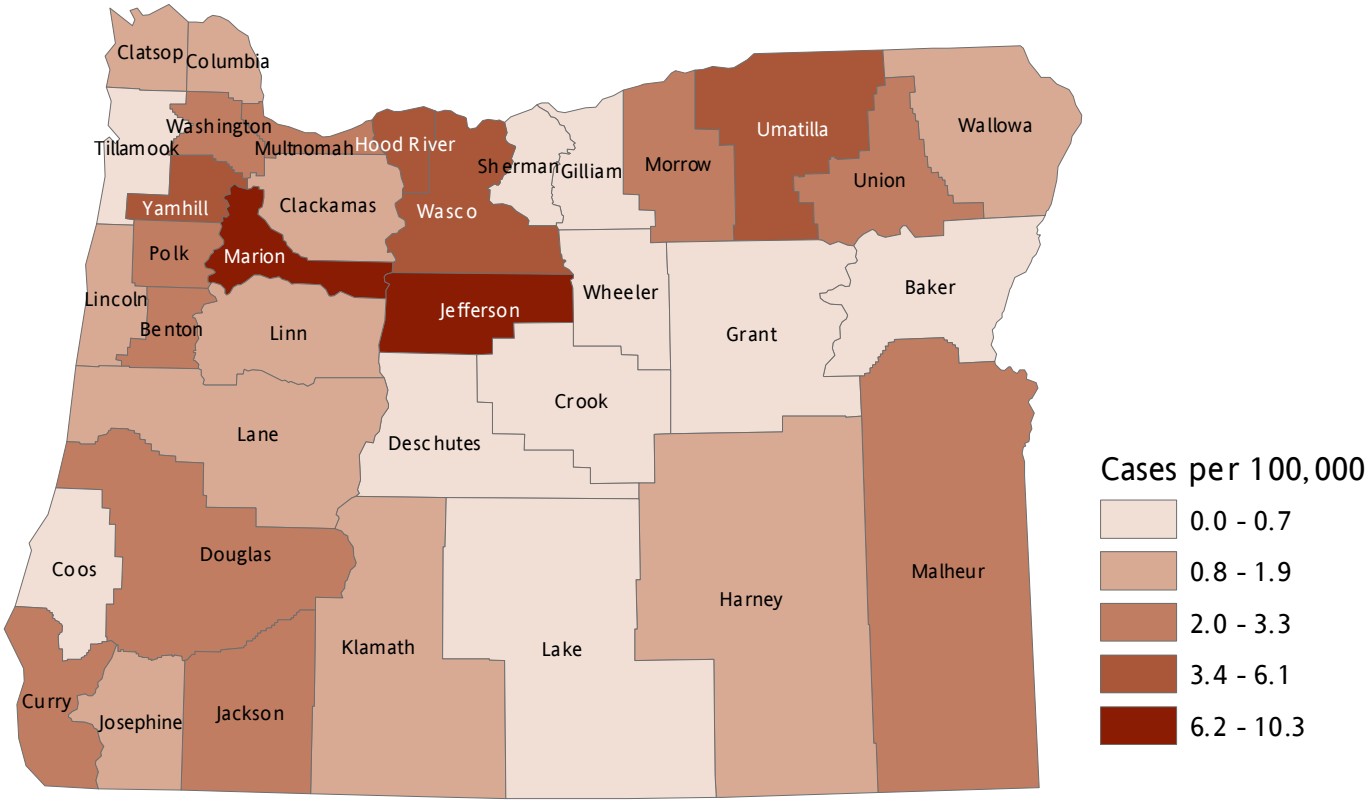



| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 4.7 | 6.1 | 5.7 | 3.1 | 4.6 | 3.3 | 3.0 | 6.0 | 2.4 | 3.5 | 3.3 | 2.3 | 2.5 | 1.5 | 1.5 | 1.5 |
| U.S. | 9.9 | 8.6 | 8.7 | 6.4 | 8.2 | 7.1 | 8.2 | 8.1 | 4.8 | 5.5 | 5.2 | 6.6 | 7.5 | 5.2 | 4.5 | 3.8 |

## Shigellosis by species: Oregon, 2011



## Incidence of shigellosis by county of residence: Oregon, 2002–2011



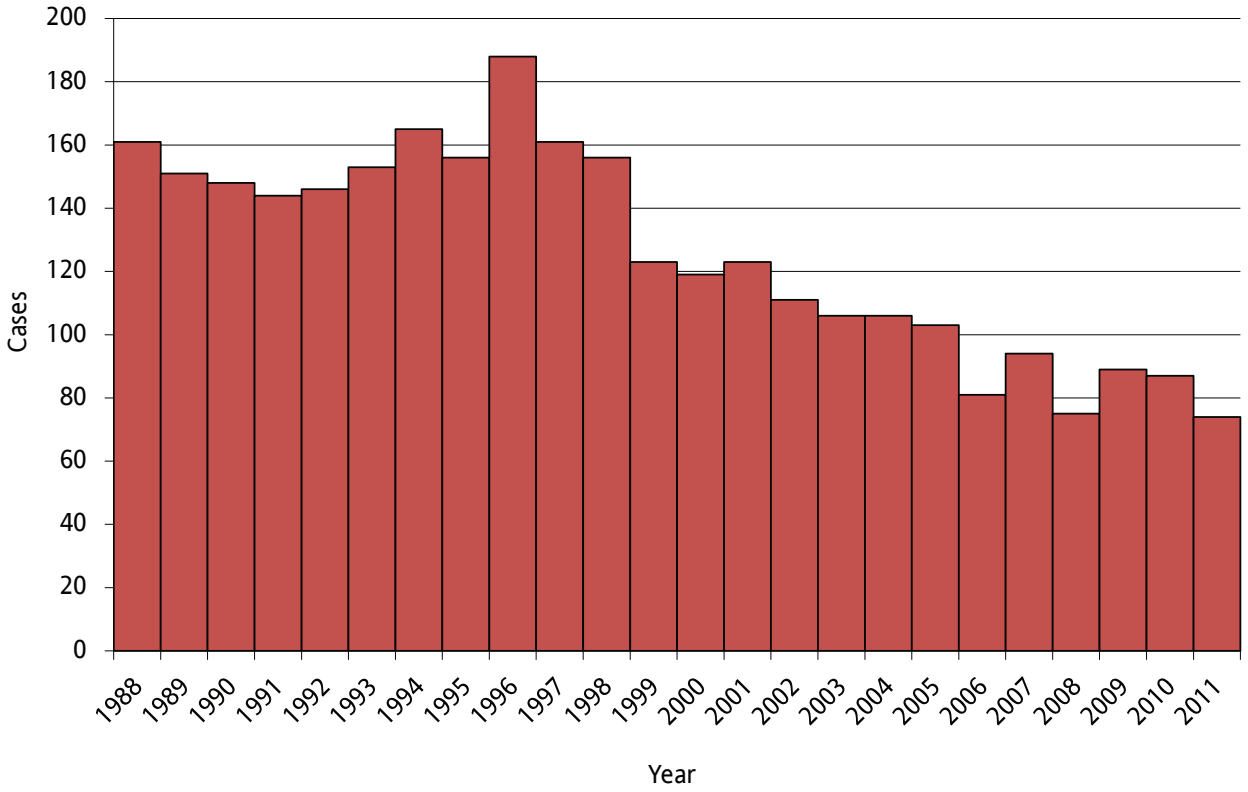
## Tuberculosis

Tuberculosis (TB) is a communicable disease caused by *Mycobacterium tuberculosis*. The most common site for active TB disease is the lung; however, TB can occur in any organ in the body. TB is spread when persons with active pulmonary or laryngeal TB cough the bacteria into the air, and other persons inhale the bacteria into their lungs.

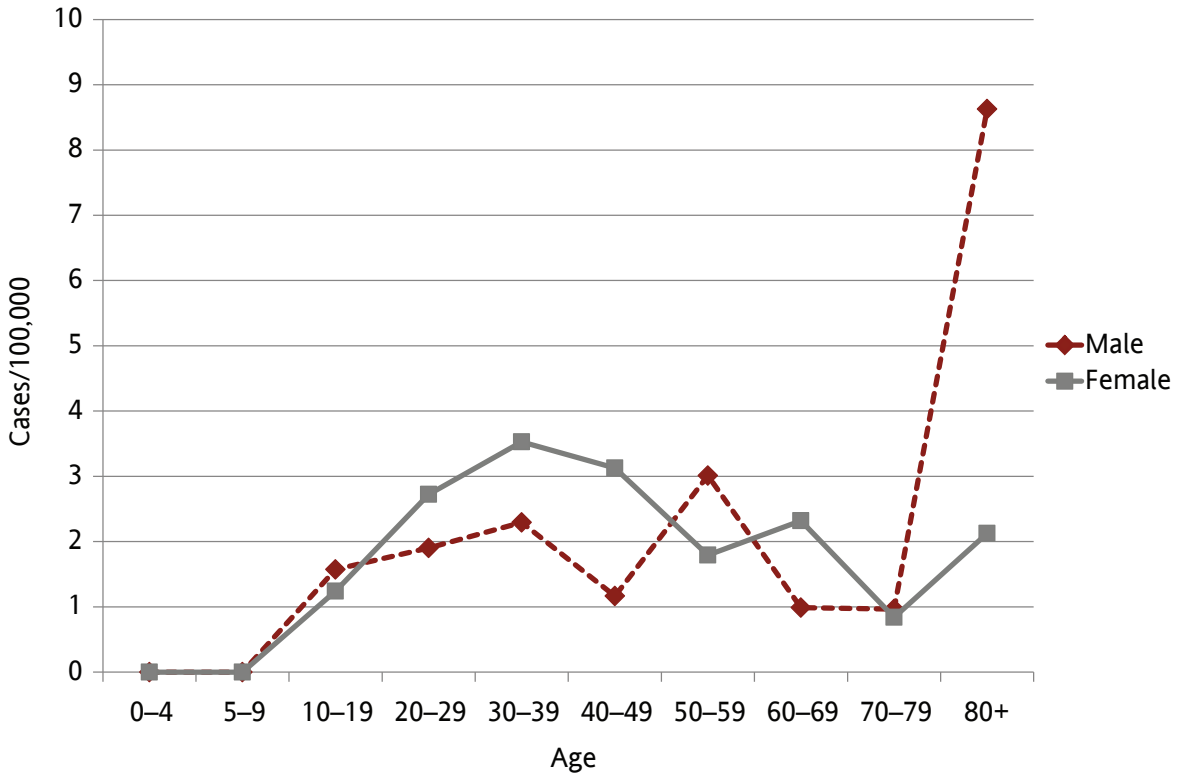
TB is preventable, treatable and curable. TB can be prevented by diagnosing and treating persons with active TB disease. It can also be prevented by identifying and treating persons with latent TB infection who, if untreated, are likely to develop active TB disease. Reporting of TB ensures that cases are treated and that contacts are identified and offered preventive antibiotics. The standard initial treatment for active TB in Oregon includes four drugs pending susceptibility testing: INH, rifampin, pyrazinamide and ethambutol. Multidrug-resistant tuberculosis (MDR TB) is resistant to at least INH and rifampin and requires treatment with second-line drugs.

The incidence rate of TB has been declining over the past decade. In 2011, a total of 74 cases of active TB disease were verified in Oregon, for a rate of 1.9 cases per 100,000 residents. Oregon's TB rate continues to meet the Healthy People 2000 goal of less than 3.5 per 100,000.

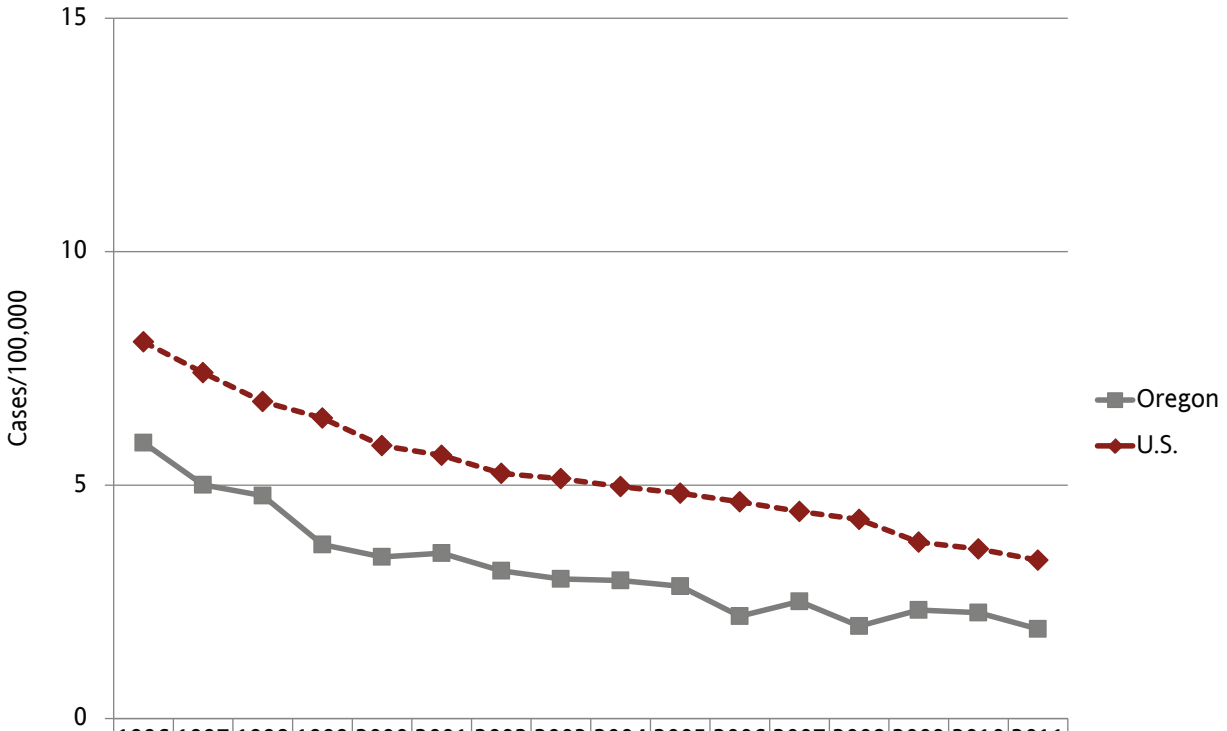
### Tuberculosis by year: Oregon, 1988–2011



## Incidence of tuberculosis by age and sex: Oregon, 2011

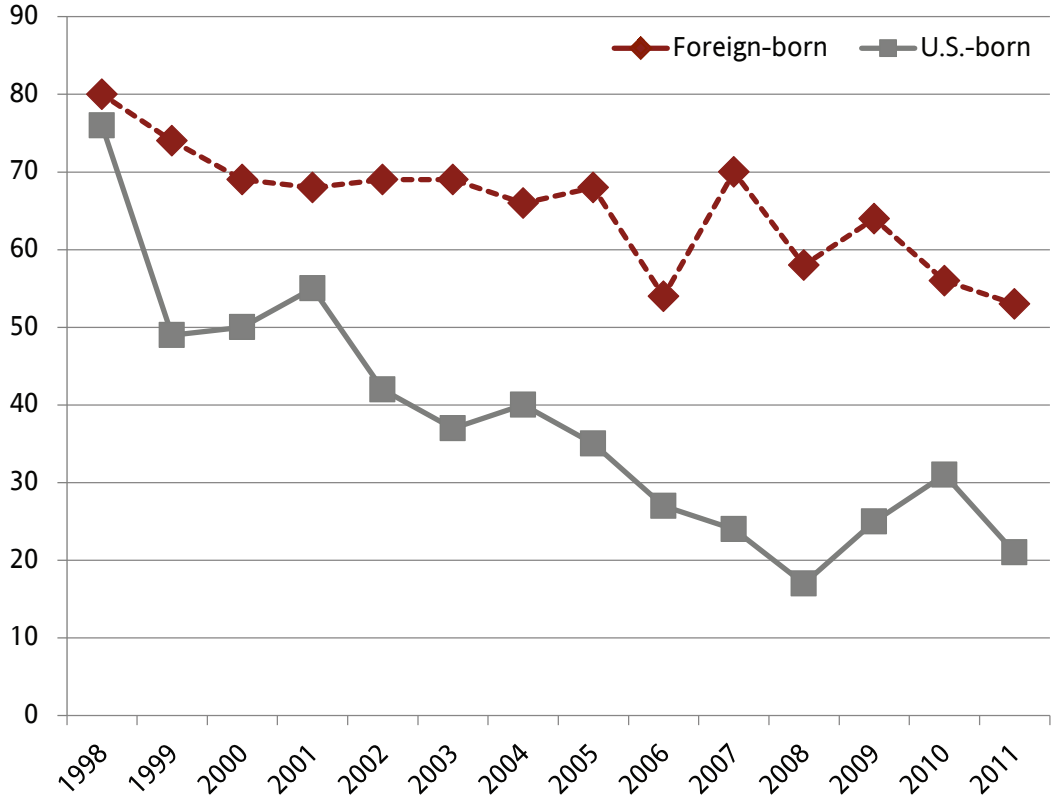



## Incidence of tuberculosis: Oregon vs. nationwide, 1996–2011

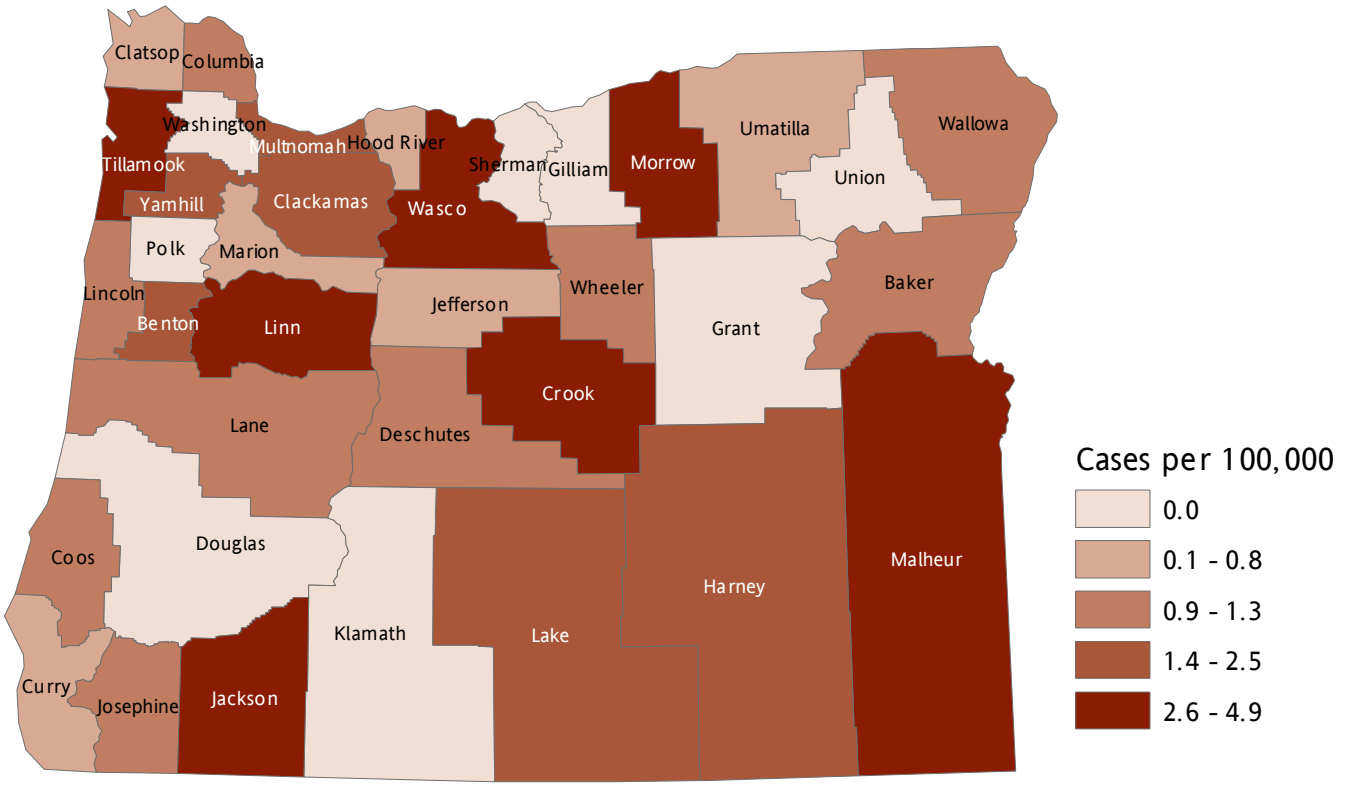



| | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Oregon | 5.9 | 5.0 | 4.8 | 3.7 | 3.5 | 3.5 | 3.2 | 3.0 | 3.0 | 2.8 | 2.2 | 2.5 | 2.0 | 2.3 | 2.3 | 1.9 |
| U.S. | 8.1 | 7.4 | 6.8 | 6.4 | 5.8 | 5.6 | 5.3 | 5.1 | 5.0 | 4.8 | 4.6 | 4.4 | 4.3 | 3.8 | 3.6 | 3.4 |

## Tuberculosis cases by country of birth, foreign-born vs. U.S.-born: Oregon, 1998–2011




## Incidence of tuberculosis by county of residence: Oregon, 2000–2011



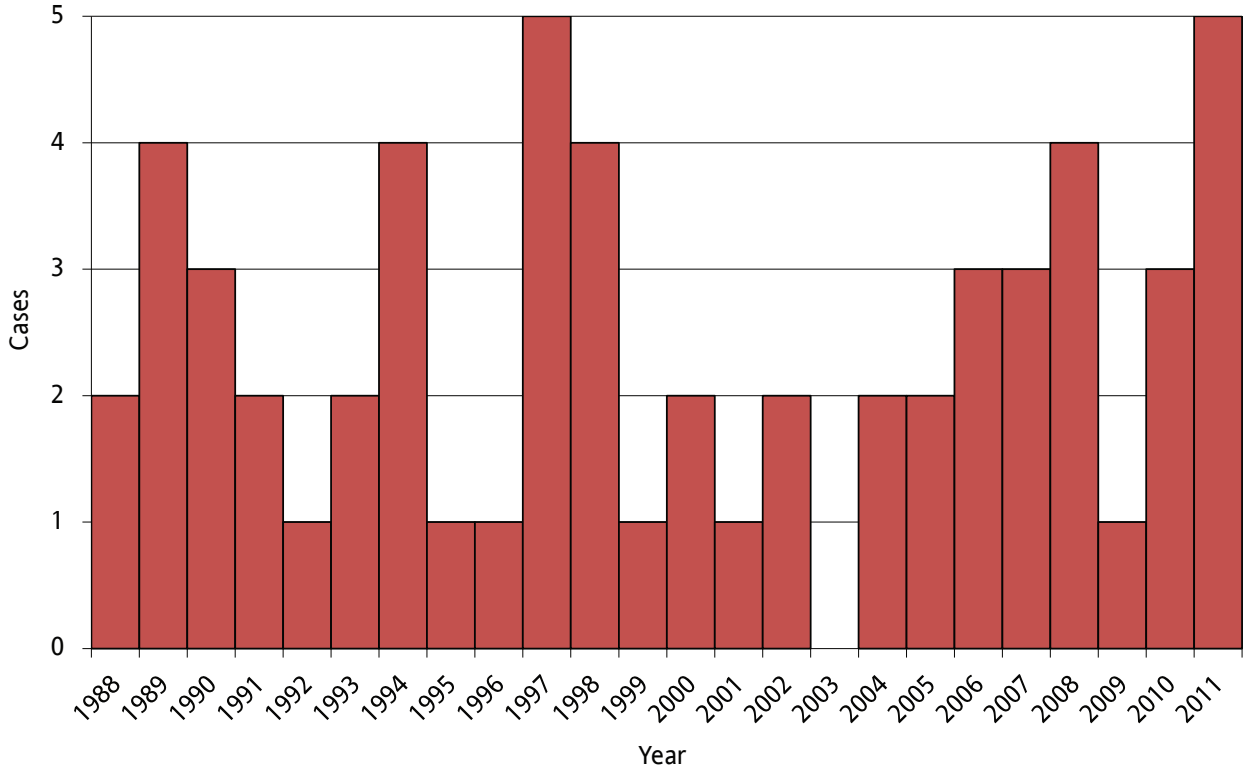
## Tularemia

Tularemia, also known as rabbit or deer-fly fever, has recently gained notoriety as a possible "category A" agent of bioterrorism. Tularemia is caused by *Francisella tularensis*, a hardy organism found in rodents, rabbits and squirrels; in ticks, deer flies and mosquitoes; and in contaminated soil, water and animal carcasses. Biovar type A, the most common type in North America, is highly virulent; as few as 10–50 organisms can cause disease.

Disease onset is usually sudden and symptoms are influenza-like; general symptoms of tularemia include fever, malaise, myalgias, headache, chills, rigors and sore throat. Tularemia has six clinical forms, depending on portal of entry. Ulceroglandular tularemia is the most common form of the disease, accounting for 75% to 85% of naturally occurring cases. Other clinical forms include pneumonic (pulmonary symptoms); typhoidal (gastrointestinal symptoms and sepsis); glandular (regional adenopathy without skin lesion); oculoglandular (painful, purulent conjunctivitis with adenopathy); and oropharyngeal (pharyngitis with adenopathy).

Tularemia occurs throughout the United States. Persons become infected primarily through handling contaminated animals; the bite of infective deer flies, mosquitoes or ticks; direct contact with or ingestion of contaminated food, water or soil; or inhalation of infective aerosols. From 2000 to 2011, 28 cases of tularemia were reported in Oregon. Cases occurred in residents of 13 counties and were evenly spread across age groups. In 2010, there were three cases; in 2011, there were five cases.

### Tularemia by year: Oregon, 1988–2011



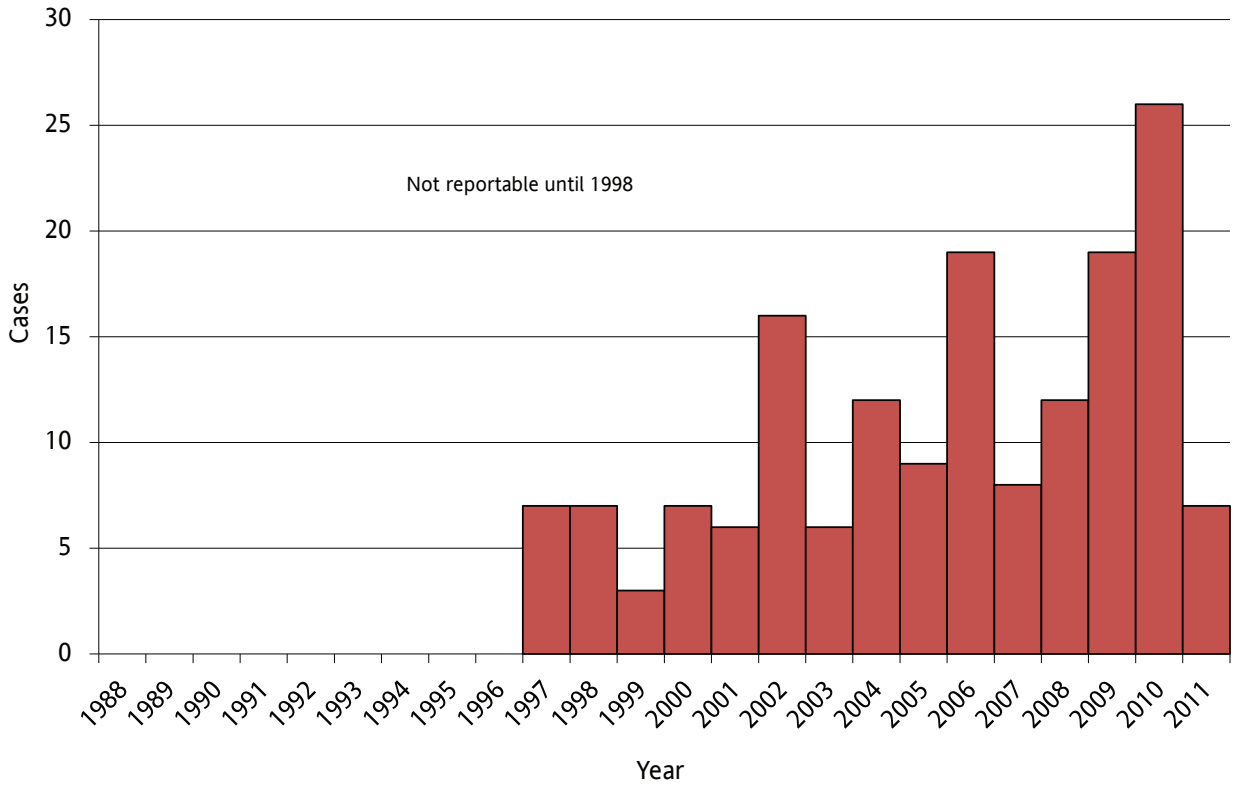
## Vibriosis

Vibriosis is caused by infection with *Vibrio* bacteria. *Vibrio* is a species of bacteria that causes watery diarrhea, abdominal cramps and fever. They are commonly found in coastal marine waters and, therefore, in filter-feeding shellfish, such as oysters (which, for this reason, should be eaten only when fully cooked). Some *Vibrio* species are more likely to cause wound infections (e.g., *V. alginolyticus*) after the skin is lacerated (for example, after shucking an oyster).

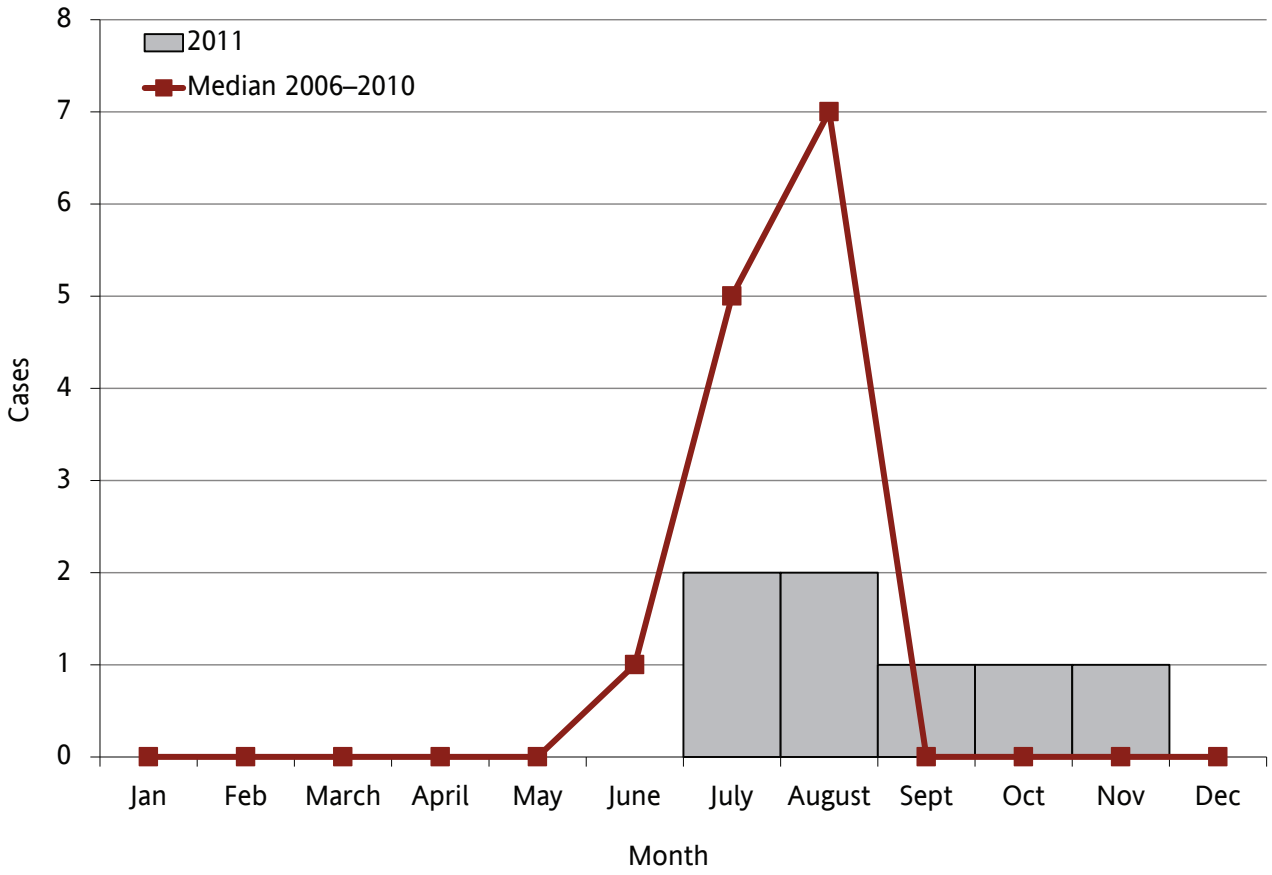
Non-cholera *Vibrio* infections were not nationally reportable until 2007 and not reportable in Oregon until 1998. Today, all *Vibrio* infections are nationally notifiable, and in addition to Oregon's reporting forms, additional CDC supplements need to be completed for each case. *V. parahaemolyticus*, which occurs naturally in Pacific coastal waters, especially during warmer months, is by far the most common species diagnosed in Oregon. Case reporting is essential to the identification of contaminated shellfish beds and removal of these shellfish from the raw seafood market.

In the past several years, *Vibrio* infections have increased across the nation, and Oregon is following the same trend. It could be that we're getting better at identifying cases or it could be that with warmer temperatures there are just more opportunities for exposure. Oregon saw five laboratory confirmed and two presumptive cases in 2011, the lowest since 2003. All the confirmed cases were *V. parahaemolyticus*. The majority (71%) of cases occurred in males.

### *Vibrio* infections: Oregon, 1988–2011



## Vibriosis by onset month: Oregon, 2011



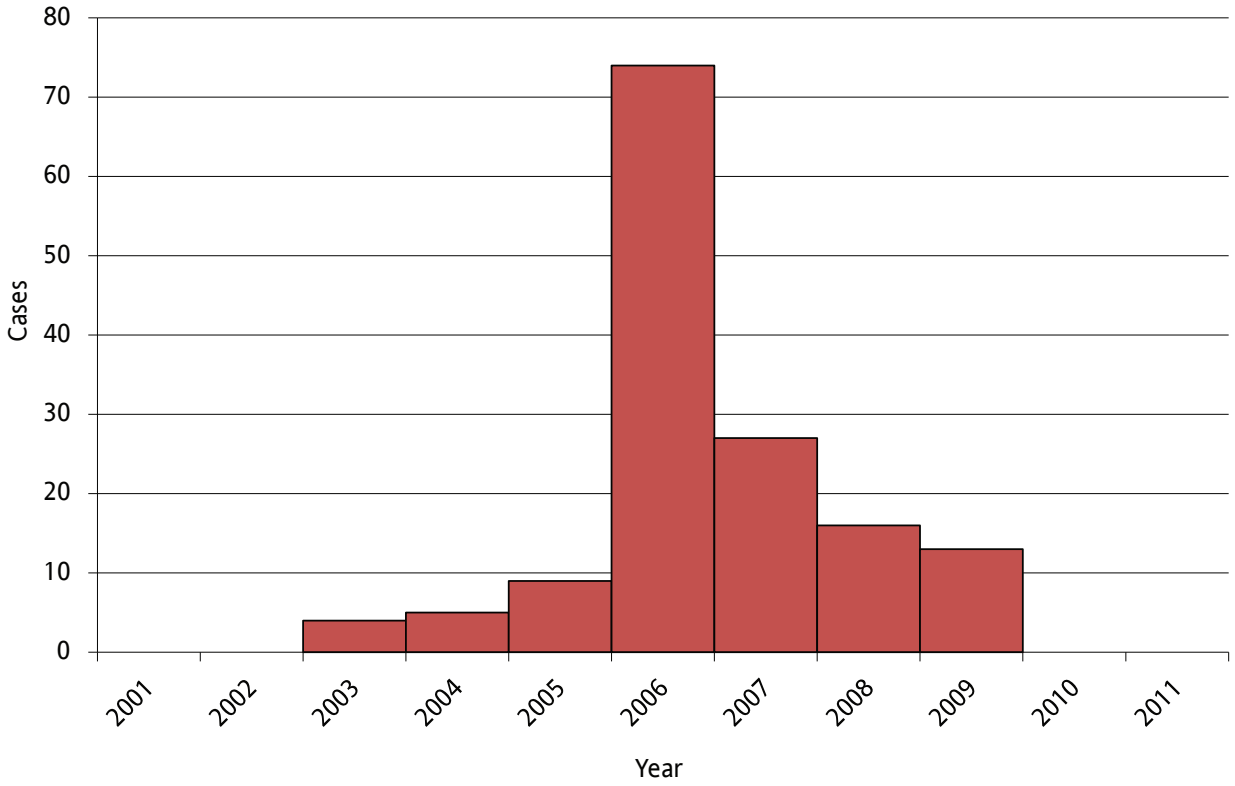
## West Nile virus

West Nile virus (WNV) first appeared in the United States in 1999, and has moved westward across the country. In Oregon, the first case was reported in 2004. While the chart below notes 2003 cases, those residents acquired the illness in another state. West Nile virus is a mosquito-borne virus that affects both animals and humans. Birds are the reservoir; humans and other animals are considered "dead-end" hosts.

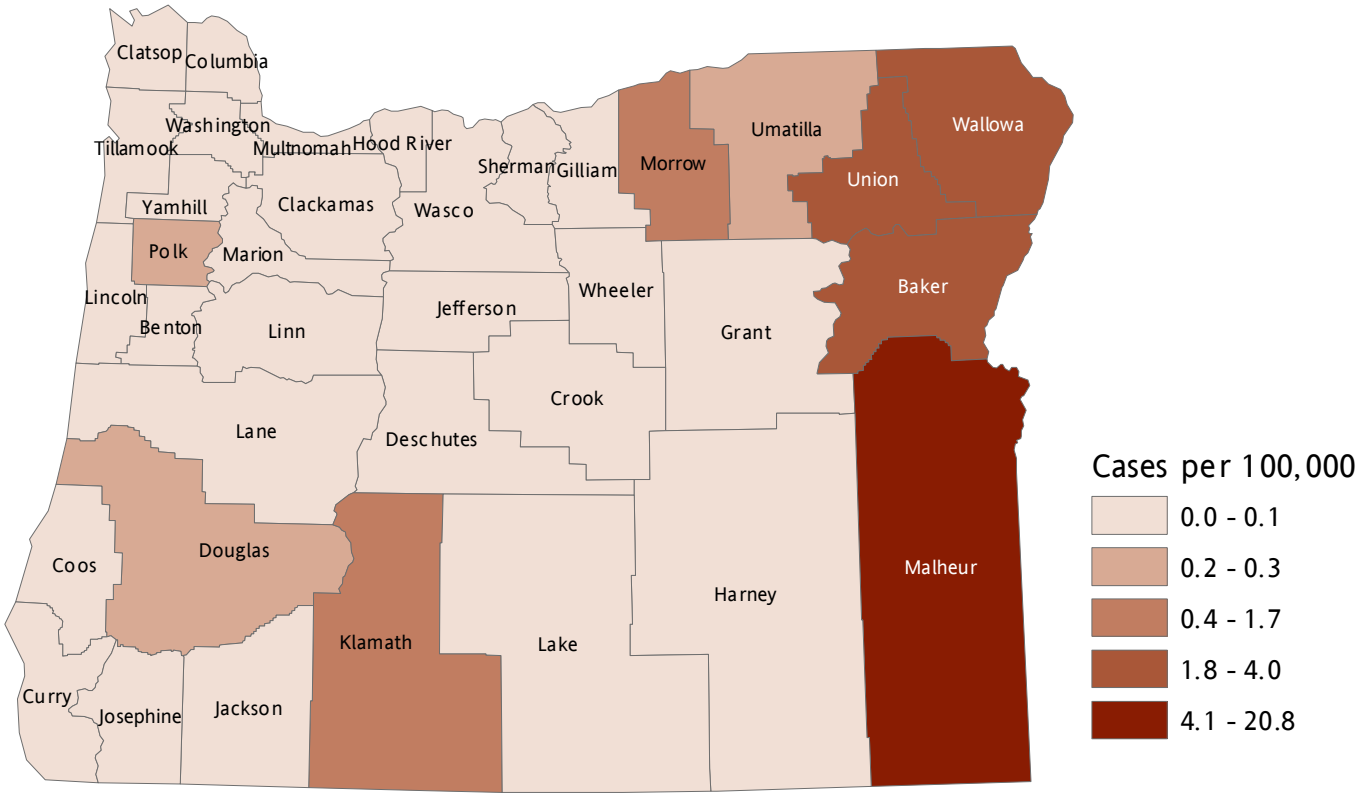
Of those infected, one in five will have mild symptoms such as fever, headache and muscle aches; fewer people, approximately one in 150, will have more severe symptoms that may include neck stiffness, stupor, disorientation, tremors, convulsions, muscle weakness, paralysis and coma. The risk of getting West Nile virus in Oregon has been very low. Though most cases were in those aged 20–50 years, those over 50 years of age have the highest risk of developing serious illness. The incidence in summer months is higher.

No human cases of West Nile virus were reported in 2010 or 2011; however, mosquito pools continue to test positive.

### West Nile virus by year: Oregon, 2001–2011



## Incidence of West Nile virus by county of residence: Oregon, 2005–2011



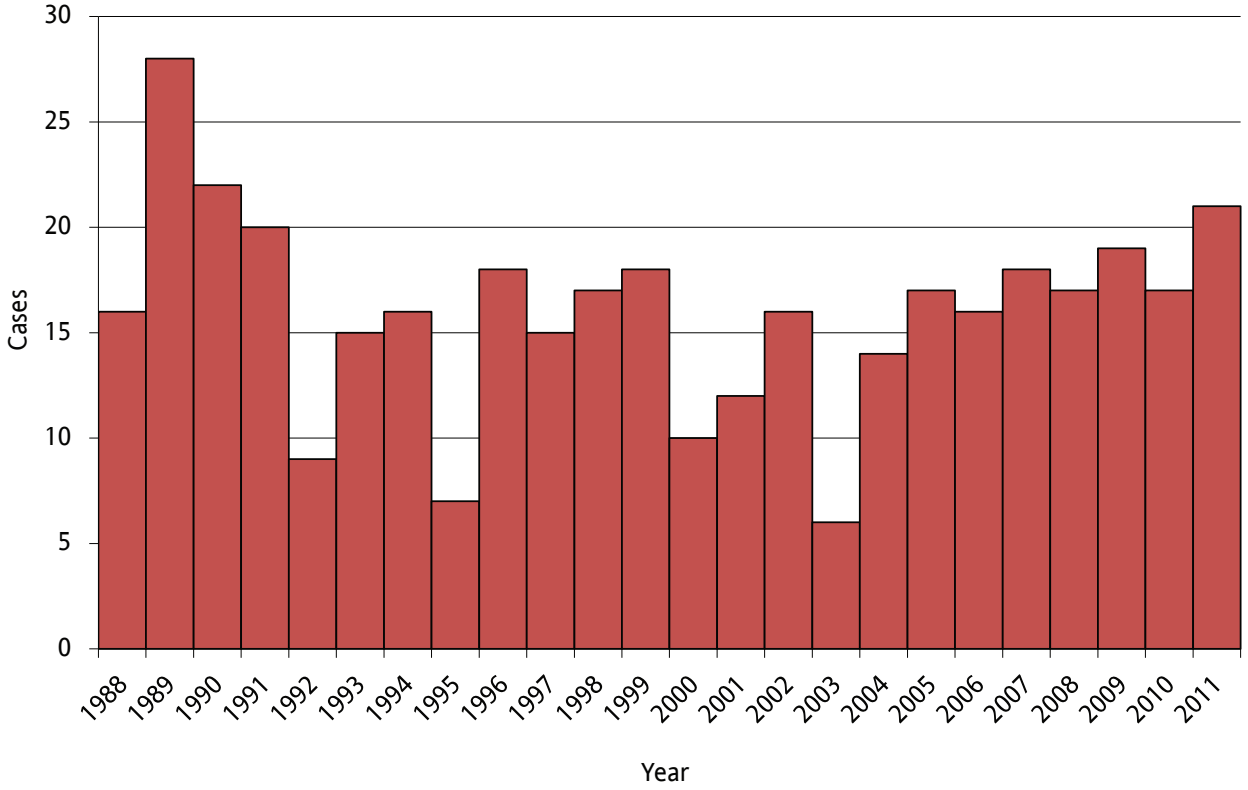

County of residence not necessarily county of exposure

## Yersiniosis

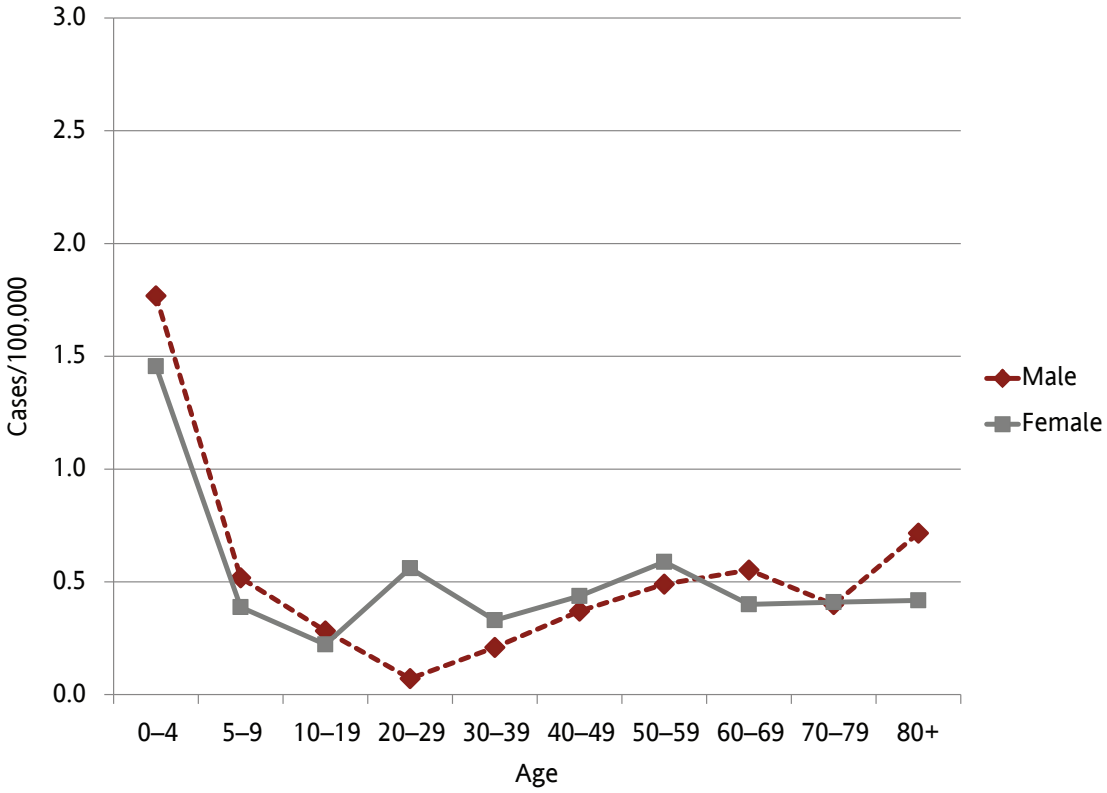
Yersiniosis is a bacterial infection characterized by (sometimes bloody) diarrhea, vomiting and abdominal pain. The main reservoir for *Yersinia* is the pig. Transmission occurs via the fecal-oral route through contaminated food and water, or through contact with infected people or animals. Preventive measures include cooking food thoroughly, avoiding cross-contamination with raw food of animal origin, and washing hands after handling food.

The incidence of yersiniosis in Oregon has been fairly stable over the years. In 2003, the number of cases dropped to six, the lowest reported incidence since 1995. Yersiniosis occurs throughout the year with no seasonality. The most common species is *Y. enterocolitica*. In 2011, there were 21 cases, a slight increase from 2010. No outbreaks were reported.

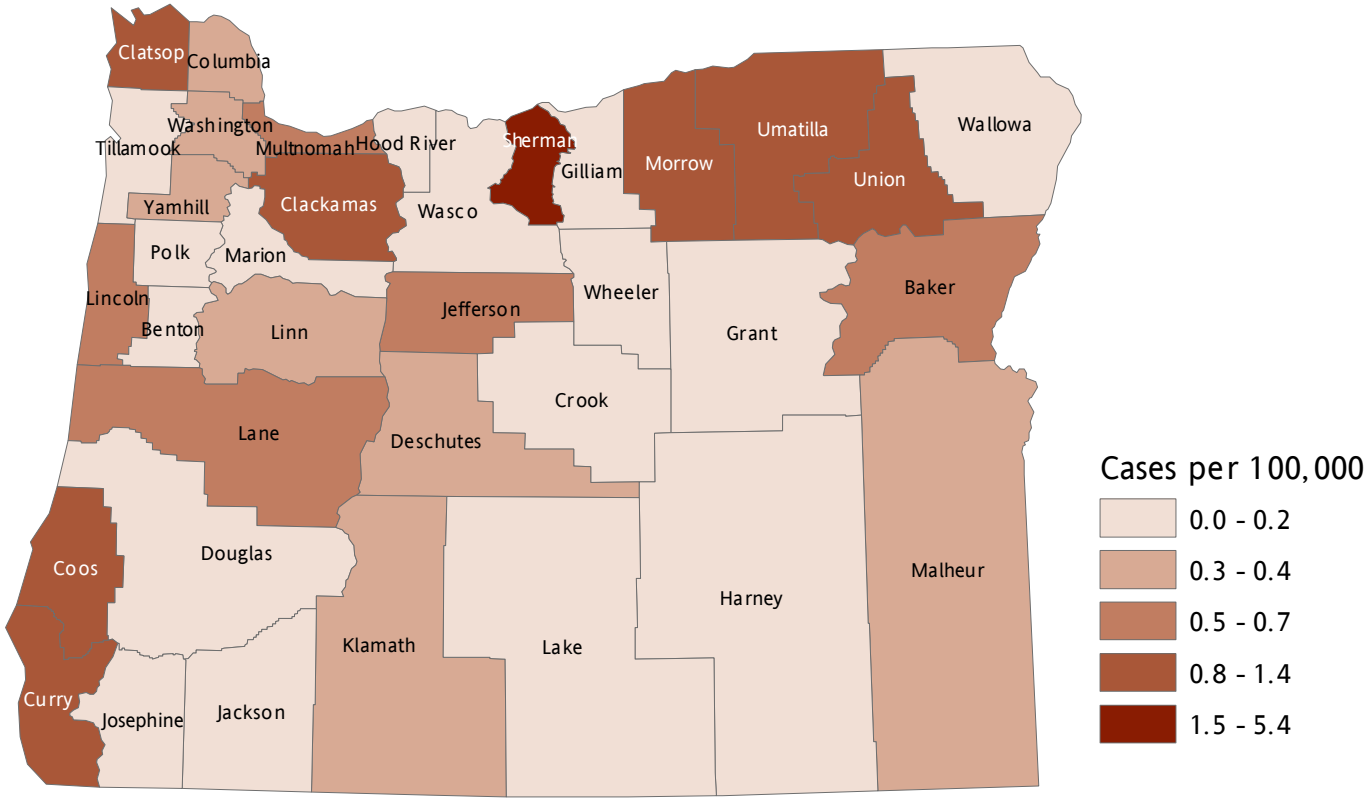
### Yersiniosis by year: Oregon, 1988–2011



## Yersiniosis by age and sex: Oregon, 2002–2011




## Incidence of yersiniosis by county of residence: Oregon, 2002–2011



## Disease outbreaks

Oregon state and local health departments investigated 157 acute and communicable disease outbreaks in 2011, down from 229 in 2010 (a 32% change). The majority (76) of these were outbreaks of calicivirus gastroenteritis. Twenty-four outbreaks were foodborne, sixteen were respiratory, and three were due to animal contact. In many (37) outbreak investigations the mode of transmission was undetermined. Sharing of respiratory secretions caused outbreaks of pertussis (6), varicella (3) and meningococcal disease (1). Foods contaminated with a garden variety of *Salmonella* made folks ill at a variety of venues including restaurants, markets and fairs. Every outbreak reinforces the age-old public health mantras — "wash your hands" and "cover your cough."

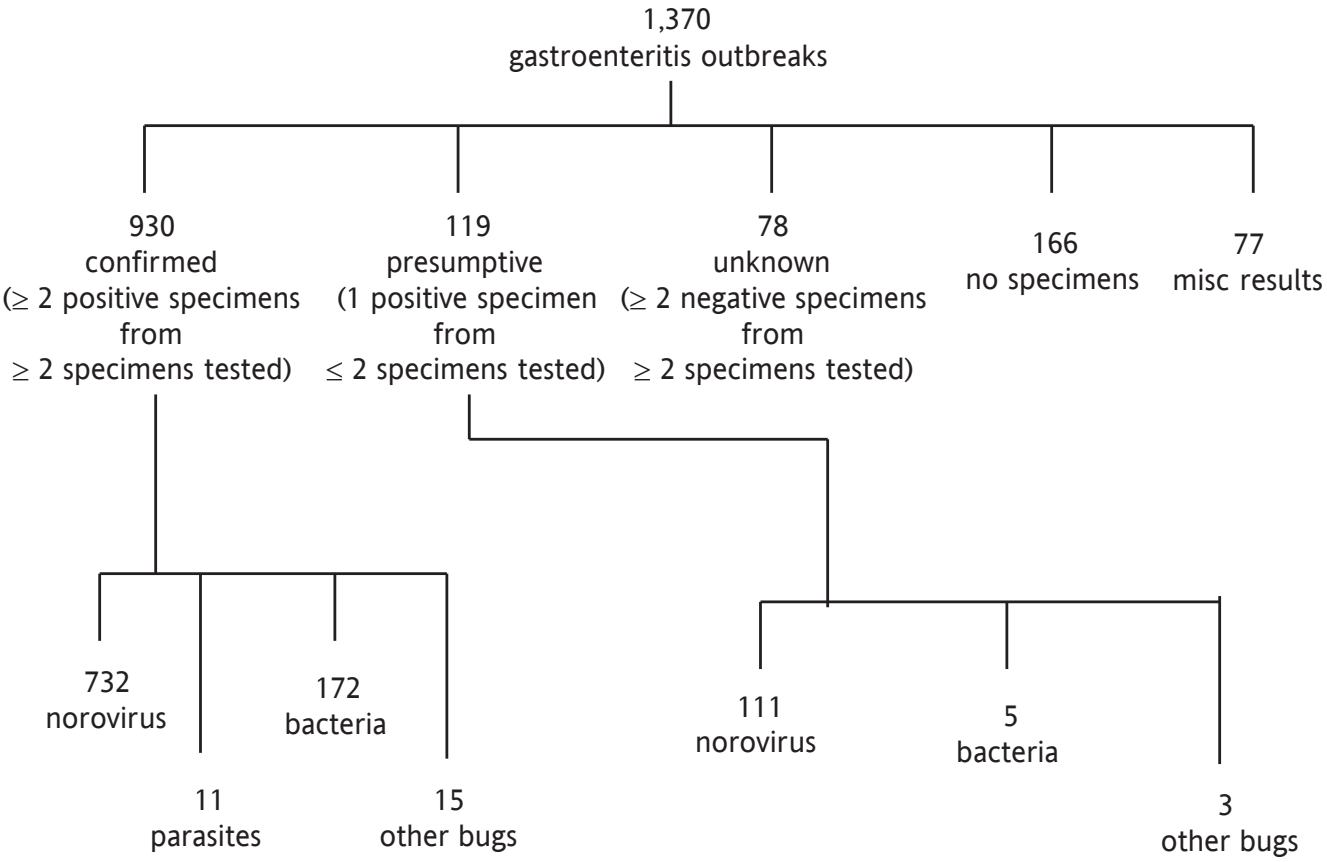
In 2002, we beefed-up reporting and investigating outbreaks in long-term care facilities. A summary of Oregon's enhanced data collection follows.

## Gastroenterititis outbreaks, Oregon, 2003–2011

Gastroenteritis outbreaks are by far the most commonly reported outbreaks in Oregon, accounting for 1,370 (85%) of the 1,619 outbreaks investigated from 2003–2011.

Thanks to rigorous stool specimen collection by local health investigators, 68% of gastroenteritis outbreaks had disease-causing agents identified, mostly caliciviruses (norovirus and sapovirus). Oregon State Public Health Lab now routinely tests for sapovirus when stool specimens are norovirus-negative.

### Gastroenteritis outbreaks by confirmation and infection, Oregon, 2003–2011

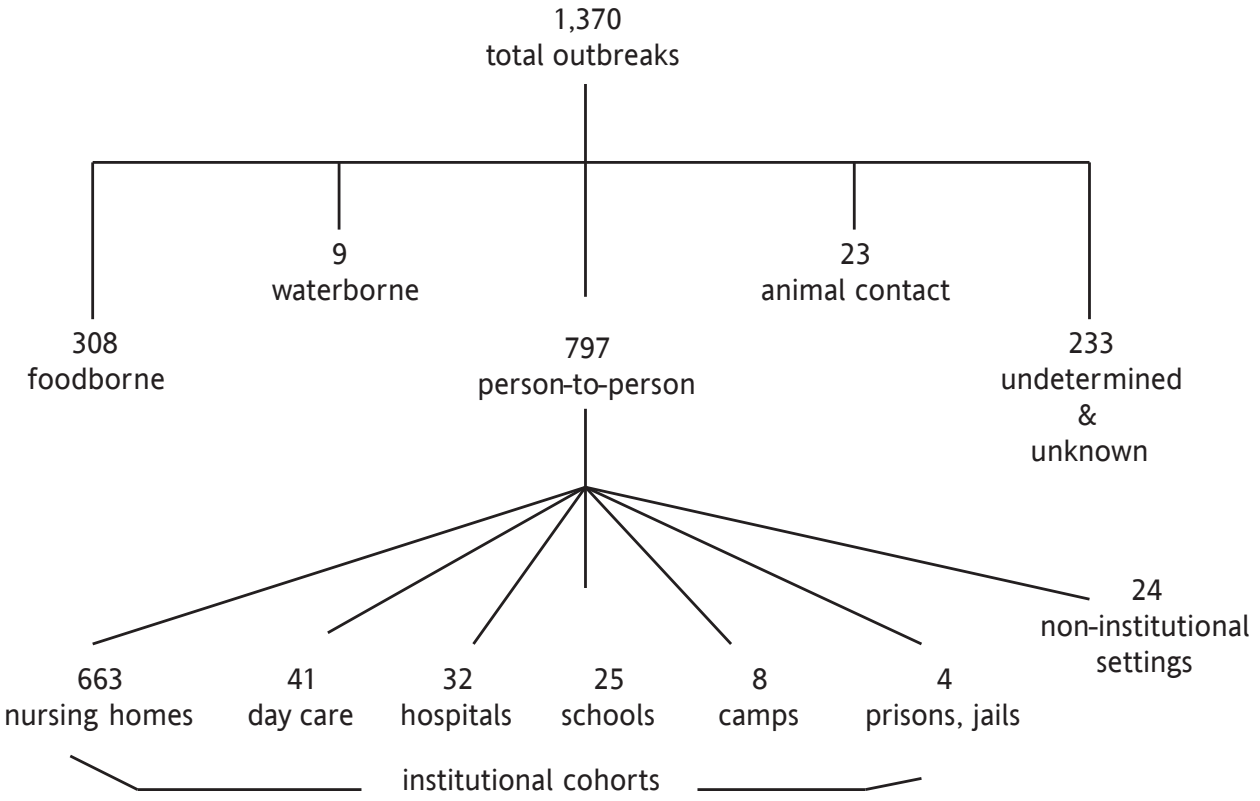



Finalized September 13, 2012

## Gastroenterititis outbreaks by transmission modes and settings: Oregon, 2003–2011

Person-to-person transmission was responsible for 58% of outbreaks and foodborne transmission for 23%. Transmission was undetermined (we couldn't figure it out) or unknown (we didn't have enough data to figure it out) in 17% of the outbreaks. More than 50% of the outbreaks happened in institutional cohorts, especially in long-term care.

### Gastroenteritis outbreaks by transmission modes and settings, Oregon, 2003–2011

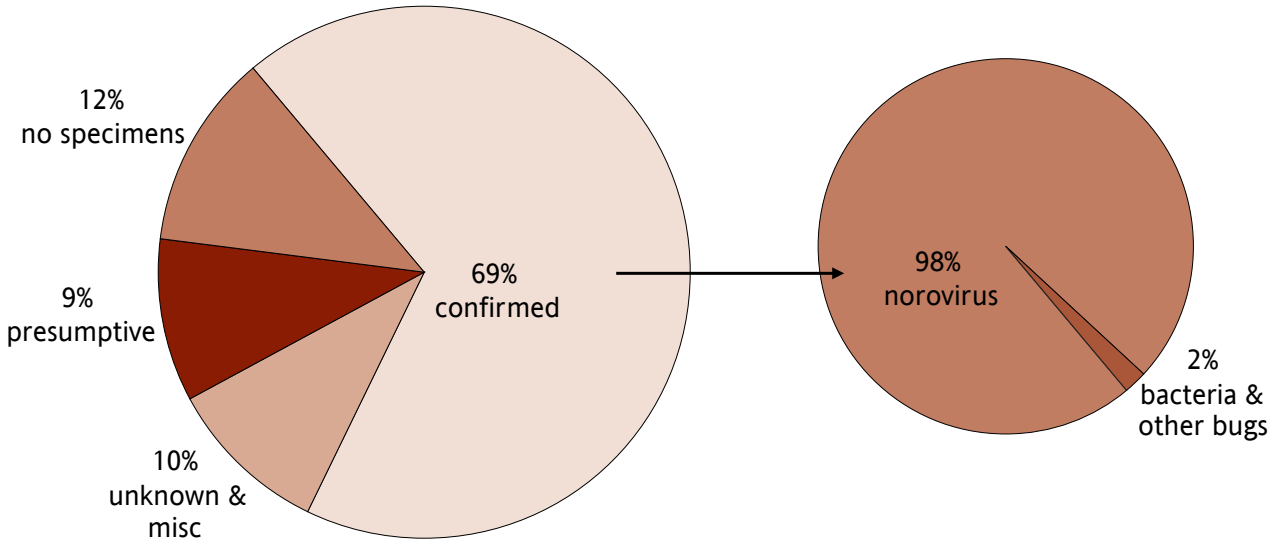



Finalized September 13, 2012

## Gastroenteritis outbreaks in long-term care: Oregon, 2003–2011

Slightly less than one-half of reported gastroenteritis outbreaks occurred in long-term care facilities for the elderly. Seventy-eight percent had confirmed or presumptive etiologies, and 98% of etiologically confirmed outbreaks were caused by noroviruses.

### Gastroenteritis outbreaks in long-term care (n=750), all transmission modes, Oregon, 2003–2011




Finalized September 13, 2012

## Gastroenteritis outbreaks in long-term care by county of occurrence and year of investigation: Oregon, 2003–2011

| County | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| Baker | 0 | 0 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 5 |
| Benton | 2 | 1 | 2 | 3 | 3 | 3 | 1 | 1 | 3 | 19 |
| Clackamas | 3 | 4 | 5 | 13 | 12 | 11 | 6 | 17 | 6 | 77 |
| Clatsop | 1 | 2 | 0 | 1 | 4 | 1 | 2 | 5 | 1 | 18 |
| Columbia | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 5 |
| Coos | 1 | 0 | 1 | 1 | 2 | 2 | 2 | 2 | 1 | 12 |
| Crook | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| Curry | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Deschutes | 2 | 0 | 1 | 8 | 5 | 9 | 6 | 5 | 3 | 39 |
| Douglas | 0 | 3 | 1 | 3 | 4 | 4 | 0 | 4 | 2 | 21 |
| Grant | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 3 |
| Harney | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 2 |
| Hood River | 4 | 0 | 0 | 2 | 1 | 1 | 2 | 1 | 2 | 13 |
| Jackson | 6 | 8 | 5 | 7 | 7 | 4 | 8 | 4 | 2 | 51 |
| Jefferson | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Josephine | 0 | 1 | 1 | 5 | 2 | 3 | 0 | 0 | 0 | 12 |
| Klamath | 0 | 1 | 0 | 3 | 2 | 2 | 0 | 2 | 4 | 14 |
| Lake | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Lane | 5 | 8 | 5 | 9 | 13 | 11 | 8 | 14 | 6 | 79 |
| Lincoln | 0 | 0 | 3 | 0 | 0 | 1 | 1 | 2 | 1 | 8 |
| Linn | 0 | 1 | 1 | 4 | 2 | 7 | 0 | 5 | 3 | 23 |
| Malheur | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 3 |
| Marion | 4 | 6 | 7 | 15 | 17 | 20 | 6 | 10 | 7 | 92 |
| Morrow | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| multi-state | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Multnomah | 1 | 5 | 2 | 6 | 14 | 12 | 20 | 13 | 20 | 93 |
| Polk | 2 | 1 | 1 | 3 | 3 | 3 | 5 | 2 | 1 | 21 |
| Tillamook | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 4 |
| Umatilla | 0 | 2 | 0 | 2 | 2 | 1 | 0 | 2 | 3 | 12 |
| Union | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 0 | 1 | 6 |
| Wasco | 2 | 0 | 1 | 3 | 0 | 1 | 2 | 2 | 1 | 12 |
| Washington | 1 | 0 | 0 | 12 | 12 | 9 | 11 | 9 | 4 | 58 |
| Yamhill | 3 | 3 | 0 | 6 | 6 | 6 | 2 | 8 | 4 | 38 |
| **Total** | **40** | **48** | **39** | **112** | **118** | **120** | **85** | **112** | **76** | **750** |

## Infections, diseases and conditions reportable by clinicians: 2010

**REPORT IMMEDIATELY**

Anthrax (*Bacillus anthracis*)
Botulism (*Clostridium botulinum*)
Cholera (*Vibrio cholerae* O1, O139, or toxigenic)
Diphtheria (*Corynebacterium diphtheriae*)
Hemorrhagic fever caused by viruses of the filovirus (e.g., Ebola, Marburg) or arenavirus (e.g., Lassa, Machupo) families
Influenza (novel)[5]
Marine intoxication (intoxication caused by marine microorganisms or their byproducts (e.g., paralytic shellfish poisoning, domoic acid intoxication, ciguatera, scombroid)
Measles (rubeola)
Plague (*Yersinia pestis*)
Poliomyelitis
Rabies (human)
Rubella
SARS (Severe Acute Respiratory Syndrome or SARS-coronavirus)
Smallpox (variola major)
Tularemia (*Francisella tularensis*)
Yellow fever
Outbreaks and uncommon illnesses (any known or suspected common-source outbreak; any uncommon illness of potential public health significance

**REPORT WITHIN 24 HOURS**
**(including weekends and holidays)**

*Haemophilus influenzae* (any isolation or identification from a normally sterile site)
*Neisseria meningitidis*
Pesticide poisoning

**REPORT WITHIN ONE WORKING DAY**

Animal bites (of humans)
Arthropod vector-borne disease (e.g.: Western equine encephalitis, Eastern equine encephalitis, St. Louis encephalitis, dengue, West Nile fever, California encephalitis, ehrlichiosis, babesiosis, Kyasanur Forest disease, Colorado tick fever, etc.)
Brucellosis (*Brucella*)
Campylobacteriosis (*Campylobacter*)
Chancroid (*Haemophilus ducreyi*)
Chlamydiosis (*Chlamydia trachomatis*; lymphogranuloma venereum)
Creutzfeldt-Jakob disease (CJD) and other transmissible spongiform encephalopathies

Cryptosporidiosis (*Cryptosporidium*)
Cyclosporosis (*Cyclospora cayetanensis*)
*Escherichia coli* (Shiga-toxigenic, including *E. coli* O157 and other serogroups)
Giardiasis (*Giardia*)
Gonococcal infections (*Neisseria gonorrhoeae*)
Hantavirus
Hemolytic uremic syndrome (HUS)
Hepatitis A
Hepatitis B (acute or chronic infection)
Hepatitis C (acute or chronic infection)
Hepatitis D (delta)
HIV infection (does not apply to anonymous testing) and AIDS
Legionellosis (*Legionella*)
Leptospirosis (*Leptospira*)
Listeriosis (*Listeria monocytogenes*)
Lyme disease (*Borrelia burgdorferi*)
Malaria (*Plasmodium*)
Mumps
Pelvic inflammatory disease (PID, acute, non-gonococcal)
Pertussis (*Bordetella pertussis*)
Psittacosis (*Chlamydophila psittaci*)
Q fever (*Coxiella burnetii*)
Relapsing fever (*Borrelia*)
*Rickettsia* (all species: Rocky Mountain spotted fever, typhus, others)
Salmonellosis (*Salmonella,* including typhoid)
Shigellosis (*Shigella)*
Syphilis (*Treponema pallidum*) *Taenia* infection (including cysticercosis and tapeworm infections)
Tetanus (*Clostridium tetani*)
Trichinosis (*Trichinella*)
Tuberculosis (*Mycobacterium tuberculosis* and *M. bovis*)
Vibriosis (other than cholera)
Yersiniosis (other than plague)

**FOOTNOTES**

1. ORS 409.050, 433.004; OAR 333-018-0000 to OAR 333-018-0015 (http://arcweb.sos.state.or.us/rules/OARs_300/OAR_333/333_018.html)
2. http://www.oregon.gov/DHS/ph/lhd/lhd.shtml
3. http://edocket.access.gpo.gov/cfr_2004/octqtr/pdf/45cfr164.512.pdf
4. http://arcweb.sos.state.or.us/rules/OARs_300/OAR_333/333_026.html
5. Influenza A virus that cannot be subtyped by commercially distributed assays.

## Diseases, infections, microorganisms and conditions reportable by laboratories: 2010

### BACTERIA

*Bacillus anthracis**
*Bordetella pertussis*
*Borrelia*
*Brucella*
*Campylobacter*
*Chlamydia trachomatis*
*Chlamydophila psittaci*
*Clostridium botulinum**
*Clostridium tetani*
*Corynebacterium diphtheriae**
*Coxiella burnetii*
*Ehrlichia*
*Escherichia coli* (Shiga-toxigenic)[6]
*Francisella tularensis**
*Haemophilus ducreyi*
*Haemophilus influenzae*[5,7]
*Legionella*
*Leptospira*
*Listeria monocytogenes*[5]
*Mycobacterium bovis*
*Mycobacterium tuberculosis*[5]
*Neisseria gonorrhoeae*
*Neisseria meningitidis*[5,7]
*Rickettsia*
*Salmonella*[5]
*Shigella*[5]
*Treponema pallidum*
*Vibrio cholerae** [5]
*Vibrio,* non-*cholerae*[5]
*Yersinia pestis** [5]
*Yersinia,* non-*pestis*[5]

### PARASITES

*Babesia*
*Cryptosporidium*
*Cyclospora*
*Giardia*
*Plasmodium*
*Taenia solium*[8]
*Trichinella*

### VIRUSES

Arboviruses[1]
Arenaviruses* [10]
Filoviruses* [10]
Hantavirus
Hepatitis A[9]
Hepatitis B[9]
Hepatitis C
Hepatitis D (delta)
Hemorrhagic fever viruses* [10]
HIV infection and AIDS
Influenza, novel strain* [11]
Measles (rubeola)*
Mumps
Polio*
Rabies*
Rubella*
SARS-coronavirus*
Variola major (smallpox)*
West Nile
Yellow fever*

* Report by phone immediately, any time day or night.

## OTHER IMPORTANT reportables

Any "uncommon illness of potential public health significance"[1]
Any outbreak of disease[1]
Any other typically arthropod vector-borne infection[1]
All blood lead testing results
All CD4 counts and HIV viral loads
Creutzfeldt-Jakob disease (CJD) and other prion illnesses

## FOOTNOTES

1. Oregon Revised Statute 433.004; Oregon Administrative Rule 333-018 (http://arcweb.sos.state.or.us/rules/OARs_300/OAR_333/333_018.html).
2. Refer to www.oregon.gov/DHS/ph/lhd/lhd.shtml for a list of local health departments, reporting FAQs, and more details about what to report. When in doubt, report.
3. ORS 433.004 and OAR 333-018-0013 (http://arcweb.sos.state.or.us/rules/OARs_300/OAR_333/333_018.html); Manual for Mandatory Electronic Laboratory Reporting (http://oregon.gov/DHS/ph/elr/resource.shtml).
4. ORS 431.262; OAR 333-018 (http://arcweb.sos.state.or.us/rules/OARs_300/OAR_333/333_018.html); OAR 333-026-0030 (http://arcweb.sos.state.or.us/rules/OARs_300/OAR_333/333_026.html).
5. Isolates must be forwarded to the Oregon State Public Health Laboratory (phone, 503-693-4100).
6. All confirmed or suspect isolates of *E. coli* O157, and all non-O157 Shiga-toxin-positive broths must be forwarded to the Oregon State Public Health Laboratory (phone 503-693-4100).
7. Report only isolates from normally sterile sites (e.g., neither sputum nor throat cultures).
8. Report cysticercosis and all undifferentiated *Taenia* spp., (e.g., eggs in stool O & P).
9. IgM-positive HAV and HBV serum specimens must be forwarded to the Oregon State Public Health Laboratory.
10. Hemorrhagic fever caused by viruses of the filovirus (e.g., Ebola, Marburg) or arenavirus (e.g., Lassa, Machupo) families are reportable.
11. Influenza A virus that cannot be subtyped by commercially distributed assays.

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Campylobacteriosis | 568 | 598 | 575 | 597 | 656 | 647 | 652 | 729 | 696 | 733 | 863 | 984 |
| Chlamydiosis* | 7110 | 7504 | 7200 | 7500 | 8690 | 9019 | 9578 | 9867 | 10861 | 11497 | 12338 | 13688 |
| Cryptosporidiosis | 22 | 60 | 40 | 36 | 32 | 69 | 82 | 163 | 64 | 220 | 218 | 216 |
| *E. coli* O157 (STEC) | 136 | 97 | 210 | 105 | 70 | 158 | 107 | 85 | 69 | 83 | 119 | 136 |
| Giardiasis | 673 | 535 | 431 | 406 | 443 | 417 | 425 | 462 | 448 | 429 | 483 | 438 |
| Gonorrhea* | 1039 | 1145 | 929 | 981 | 1302 | 1562 | 1460 | 1238 | 1258 | 1113 | 1078 | 1490 |
| *H. influenzae* | 30 | 38 | 57 | 42 | 49 | 53 | 55 | 66 | 57 | 57 | 69 | 75 |
| Hepatitis A | 164 | 109 | 61 | 62 | 65 | 47 | 47 | 34 | 26 | 19 | 17 | 11 |
| Acute hepatitis B | 123 | 166 | 126 | 119 | 112 | 97 | 86 | 61 | 45 | 50 | 44 | 32 |
| Acute hepatitis C | 18 | 15 | 13 | 16 | 17 | 19 | 28 | 22 | 33 | 26 | 22 | 24 |
| Legionellosis | 1 | 4 | 9 | 17 | 8 | 15 | 22 | 14 | 18 | 19 | 18 | 24 |
| Listeriosis | 6 | 12 | 9 | 5 | 7 | 11 | 13 | 8 | 6 | 19 | 17 | 10 |
| Lyme | 12 | 14 | 13 | 16 | 25 | 24 | 19 | 27 | 38 | 42 | 42 | 37 |
| Malaria | 41 | 14 | 14 | 10 | 19 | 13 | 15 | 16 | 4 | 12 | 16 | 23 |
| Measles | 0 | 3 | 0 | 3 | 0 | 2 | 2 | 2 | 1 | 0 | 0 | 3 |
| Meningococcal disease | 71 | 65 | 44 | 60 | 61 | 56 | 41 | 32 | 38 | 39 | 32 | 31 |
| Pertussis | 105 | 66 | 193 | 438 | 625 | 622 | 112 | 111 | 178 | 258 | 281 | 328 |
| Rabies, animal | 7 | 4 | 14 | 7 | 6 | 8 | 25 | 12 | 13 | 11 | 17 | 17 |
| Salmonellosis | 300 | 288 | 337 | 427 | 416 | 417 | 428 | 336 | 429 | 440 | 511 | 367 |
| Shigellosis | 159 | 115 | 106 | 211 | 87 | 127 | 121 | 87 | 94 | 56 | 58 | 57 |
| Early syphilis* | 31 | 22 | 47 | 74 | 58 | 57 | 48 | 26 | 45 | 86 | 107 | 168 |
| Tuberculosis* | 119 | 123 | 111 | 106 | 106 | 103 | 81 | 94 | 75 | 89 | 87 | 74 |
| *Vibrio parahaemolyticus* | 7 | 6 | 9 | 5 | 11 | 6 | 19 | 7 | 10 | 19 | 26 | 7 |
| West Nile virus | | | | | 3 | 8 | 73 | 27 | 16 | 12 | 0 | 0 |
| Yersiniosis | 10 | 12 | 16 | 6 | 14 | 17 | 16 | 18 | 17 | 19 | 17 | 21 |

Data as of 8/2/2012 * Case Counts By onset year except for conditions noted with * indicating counts by date of report

| | AIDS/HIV living | Campylobacteriosis | Chlamydiosis | Cryptosporidiosis | *E. coli* O157 infection | Giardiasis | Gonorrhea | *Haemophilus influenzae* | Hepatitis A | Hepatitis B (acute) | Hepatitis B (chronic) | Hepatitis C (acute) | Legionellosis |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Baker | 3 | 8 | 18 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Benton | 47 | 23 | 306 | 23 | 8 | 12 | 18 | 2 | 0 | 0 | 5 | 1 | 0 |
| Clackamas | 337 | 102 | 974 | 26 | 11 | 30 | 93 | 8 | 1 | 4 | 38 | 1 | 2 |
| Clatsop | 23 | 7 | 128 | 6 | 4 | 4 | 5 | 1 | 0 | 1 | 1 | 0 | 0 |
| Columbia | 30 | 9 | 132 | 2 | 0 | 2 | 9 | 1 | 0 | 0 | 2 | 0 | 0 |
| Coos | 39 | 23 | 179 | 0 | 4 | 4 | 2 | 2 | 0 | 0 | 4 | 0 | 0 |
| Crook | 6 | 6 | 28 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Curry | 12 | 8 | 33 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| Deschutes | 84 | 58 | 513 | 0 | 5 | 25 | 6 | 1 | 1 | 1 | 9 | 1 | 0 |
| Douglas | 67 | 25 | 218 | 1 | 10 | 7 | 2 | 3 | 0 | 0 | 5 | 2 | 0 |
| Gilliam | 0 | 2 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Grant | 3 | 4 | 11 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Harney | 1 | 6 | 19 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Hood River | 17 | 6 | 48 | 1 | 1 | 2 | 2 | 0 | 2 | 0 | 0 | 0 | 0 |
| Jackson | 152 | 43 | 528 | 4 | 9 | 9 | 41 | 4 | 0 | 1 | 11 | 0 | 1 |
| Jefferson | 14 | 3 | 140 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Josephine | 57 | 13 | 224 | 0 | 1 | 9 | 7 | 7 | 0 | 0 | 3 | 0 | 1 |
| Klamath | 25 | 18 | 199 | 1 | 0 | 9 | 24 | 4 | 1 | 0 | 4 | 2 | 0 |
| Lake | 2 | 5 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Lane | 300 | 89 | 1297 | 13 | 3 | 46 | 81 | 4 | 0 | 3 | 21 | 5 | 7 |
| Lincoln | 39 | 9 | 82 | 3 | 0 | 4 | 2 | 2 | 0 | 0 | 4 | 0 | 1 |
| Linn | 61 | 44 | 389 | 14 | 6 | 10 | 34 | 4 | 0 | 1 | 5 | 1 | 1 |
| Malheur | 22 | 11 | 124 | 1 | 5 | 1 | 0 | 0 | 1 | 1 | 3 | 0 | 0 |
| Marion | 356 | 61 | 1497 | 16 | 12 | 27 | 81 | 5 | 0 | 2 | 27 | 3 | 1 |
| Morrow | 7 | 5 | 17 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Multnomah | 2960 | 201 | 3992 | 61 | 17 | 147 | 892 | 15 | 3 | 9 | 202 | 5 | 6 |
| Polk | 32 | 10 | 202 | 0 | 1 | 6 | 13 | 1 | 0 | 1 | 0 | 1 | 1 |
| Sherman | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tillamook | 15 | 8 | 60 | 5 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Umatilla | 41 | 6 | 246 | 1 | 3 | 6 | 6 | 0 | 0 | 0 | 4 | 1 | 0 |
| Union | 12 | 9 | 85 | 1 | 0 | 3 | 2 | 1 | 0 | 1 | 2 | 0 | 0 |
| Wallowa | 3 | 2 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Wasco | 17 | 4 | 67 | 1 | 1 | 5 | 1 | 1 | 0 | 2 | 0 | 0 | 0 |
| Washington | 543 | 131 | 1640 | 30 | 22 | 53 | 145 | 7 | 2 | 5 | 70 | 1 | 3 |
| Wheeler | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Yamhill | 48 | 25 | 276 | 3 | 9 | 6 | 19 | 2 | 0 | 0 | 7 | 0 | 0 |
| Total | 5377 | 984 | 13687 | 216 | 136 | 438 | 1490 | 75 | 11 | 32 | 433 | 24 | 24 |

Data as of 8/2/2012

| | Listeriosis | Lyme disease | Malaria | Meningococcal disease | Pertussis | Rabies, animal | Salmonellosis | Shigellosis | Early syphillis | Taeniasis | Tuberculosis | West Nile virus | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Baker | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 34 |
| Benton | 1 | 3 | 4 | 0 | 11 | 1 | 4 | 3 | 1 | 0 | 2 | 0 | 475 |
| Clackamas | 1 | 2 | 0 | 1 | 48 | 1 | 46 | 4 | 7 | 0 | 9 | 0 | 1746 |
| Clatsop | 0 | 0 | 0 | 1 | 9 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 192 |
| Columbia | 0 | 0 | 0 | 0 | 3 | 0 | 7 | 0 | 2 | 0 | 0 | 0 | 199 |
| Coos | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 3 | 0 | 0 | 1 | 0 | 269 |
| Crook | 0 | 0 | 0 | 4 | 1 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 54 |
| Curry | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 60 |
| Deschutes | 0 | 0 | 0 | 4 | 1 | 0 | 16 | 0 | 1 | 0 | 0 | 0 | 726 |
| Douglas | 0 | 6 | 0 | 2 | 3 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 358 |
| Gilliam | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 |
| Grant | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Harney | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 29 |
| Hood River | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 2 | 0 | 0 | 0 | 87 |
| Jackson | 0 | 7 | 0 | 2 | 7 | 2 | 17 | 1 | 0 | 0 | 1 | 0 | 840 |
| Jefferson | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 1 | 0 | 166 |
| Josephine | 0 | 4 | 0 | 0 | 5 | 7 | 4 | 0 | 1 | 0 | 1 | 0 | 344 |
| Klamath | 0 | 1 | 0 | 0 | 1 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 296 |
| Lake | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 |
| Lane | 2 | 4 | 2 | 3 | 42 | 1 | 39 | 8 | 2 | 0 | 3 | 0 | 1975 |
| Lincoln | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 2 | 0 | 0 | 2 | 0 | 154 |
| Linn | 0 | 1 | 4 | 0 | 2 | 1 | 13 | 3 | 1 | 0 | 0 | 0 | 595 |
| Malheur | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 172 |
| Marion | 0 | 0 | 2 | 1 | 31 | 1 | 26 | 13 | 4 | 1 | 8 | 0 | 2175 |
| Morrow | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 34 |
| Multnomah | 1 | 8 | 8 | 7 | 113 | 0 | 68 | 13 | 116 | 2 | 27 | 0 | 8873 |
| Polk | 0 | 0 | 0 | 0 | 6 | 0 | 5 | 0 | 2 | 0 | 2 | 0 | 283 |
| Sherman | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 |
| Tillamook | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 94 |
| Umatilla | 0 | 0 | 0 | 0 | 1 | 0 | 6 | 0 | 2 | 0 | 1 | 0 | 324 |
| Union | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 120 |
| Wallowa | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 12 |
| Wasco | 1 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 105 |
| Washington | 1 | 0 | 2 | 3 | 39 | 1 | 53 | 5 | 23 | 2 | 14 | 0 | 2795 |
| Wheeler | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Yamhill | 0 | 1 | 0 | 0 | 2 | 1 | 10 | 0 | 0 | 0 | 0 | 0 | 409 |
| Total | 10 | 37 | 23 | 31 | 328 | 17 | 367 | 57 | 168 | 5 | 74 | 0 | 24044 |

Data as of 8/2/2012

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