The Year of the Norovirus

Norovirus is a highly contagious virus that causes gastrointestinal illness. It is common in the United States, with outbreaks occurring year-round. In 2002, the year of the Norovirus, there were significant outbreaks reported in Oregon, with cases reported in various locations throughout the state.

Norovirus symptoms include:
- Vomiting
- Diarrhea
- Nausea
- Headache
- Stomach cramps

Norovirus outbreaks can occur in a variety of settings, including nursing homes, schools, and restaurants. It is important to take precautions to prevent the spread of the virus, such as:
- Good hand hygiene
- Avoiding close contact with sick individuals
- Proper food handling and preparation

In 2002, Oregon health officials reported a significant increase in Norovirus cases. The state health department issued public health advisories and recommendations to prevent the spread of the virus.

The Year of the Norovirus

Norovirus outbreaks can be difficult to manage, as the virus is highly contagious and can be spread through various routes. It is important for healthcare providers and public health officials to stay informed about the latest information and guidelines to effectively respond to outbreaks.

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Acute & Communicable Disease Prevention
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2002 Selected Reportable Communicable Disease Summary

Compiled and prepared by
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About Surveillance Data

Oregon law* specifies diseases of public-health importance that must be reported to local health departments by diagnostic laboratories and health-care professionals. In general, for reported communicable diseases there follows an investigation by local health officials to characterize the illness and collect demographic information about the case, to identify possible sources of the infection, and to take steps necessary to minimize the risk of further transmission. Basic information about each case is forwarded to the Office for Disease Prevention and Epidemiology within the Oregon Department of Human Services. In some cases (e.g., *Salmonella* infection), laboratories are required to forward bacterial isolates to the Oregon State Public Health Laboratory for subtyping. Together, these epidemiologic and laboratory data constitute our communicable disease “surveillance system.”

But caveat lector! Disease surveillance data have many limitations.

Firstly, for most diseases, reported cases represent but a fraction of the true number. The most important reason for this is that many patients with mild disease do not present themselves for medical care. But even if they do so, the health-care professional may not order a test to identify the causative microorganism. And 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 have been estimated at 1-5% of the true number.†

Secondly, the 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 like tuberculosis — where the public-health importance of doing so is obvious — than they are to report non-contagious diseases like Lyme disease. Outbreaks of disease or media coverage about a particular disease can greatly increase testing and reporting rates.

And yet, in a larger sense, surveillance data are valuable in a variety of ways. They help to identify demographic groups at higher risk of illness. They allow analysis of disease trends. They identify outbreaks of disease.

With this in mind, we present this communicable disease summary. For most of the reportable communicable diseases, we include figures showing case counts by year for the past 10 years; aggregate case counts by month to demonstrate any seasonal trends; incidence by age and sex; incidence in Oregon as compared to national incidence over the past 10 years; and incidence by county. Where appropriate, subtyping data are included. At the end of the booklet you will find disease totals by county, a summary table of statewide case counts over the past 20 years, and a brief synopsis of foodborne disease outbreaks reported in the past year.

We hope that, with all their limitations, you will find these data useful. If you have additional questions, please call our epidemiology staff at (503) 731-4024 or e-mail ohd.acdp@state.or.us.

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Manager, Acute and Communicable Disease Prevention

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HIV/AIDS is a communicable disease spread through unprotected sex and sharing injection drug equipment with an HIV-infected partner, and to a lesser extent, through blood transfusions and breast feeding. It is tracked to assist in designing public health interventions and to promote treatment options for those infected with HIV. AIDS represents a latter stage of HIV infection, indicated by either low CD4 (immune system) cell counts or the manifestation of an opportunistic infection indicative of poor immune system functioning. Although there is no cure for HIV or AIDS, there are effective drug treatments which can prolong and enhance the quality of life.

HIV infection can be prevented by abstaining from sex outside of a monogamous relationship with an uninfected partner and from not injecting recreational drugs. Those who are sexually active outside of a mutually monogamous relationship or who inject drugs can protect themselves by using a condom when engaging in sexual activity and by not sharing injection drug equipment. Pregnant women who are infected with HIV can minimize transmission of infection to their fetus by taking zidovudine during pregnancy.

From 1981 through 2002, 5,357 cases of AIDS were reported in Oregon, including 2,997 deaths. Men account for 4,960 cases, with 397 cases in women. Most cases have been white (4,650, 87%) with 279 (5%) African Americans, 328 (6%) Hispanics, 43 (<1%) Asians, and 56 (1%) Native Americans reported. Only 18 cases of pediatric AIDS were reported in Oregon. Of this total, 286 cases of AIDS were reported in 2002. In 2002, there were all 718 cases of HIV reported, including 1 pediatric case.
Incidence of AIDS
by Age and Sex
Oregon, 2002

Cases/100,000

0-4  5-9  10-19  20-29  30-39  40-49  50-59  60-69  70-79  80+

0  10  20  30  40

Mean, 1997–2001

Male
Female

AIDS
by Onset Month
Oregon, 2002

Cases

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Incidence of AIDS
Oregon vs. Nationwide
1993–2002

Cases/100,000

Year

Incidence of AIDS
by County
Oregon, 2002

Note: Wasco and Sherman County rate is for both combined.
Campylobacteriosis is caused by a Gram-negative bacterium. It is characterized by acute onset of diarrhea, vomiting, abdominal pain, fever, and malaise. 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. It is the most common bacterial enteric infection reported.

Most outbreaks are associated with undercooked meat, unpasteurized milk or non-chlorinated water. Infections occur year 'round in Oregon, with peak incidence in the summer months. Proper food handling and water treatment, along with good hygienic practices (hand washing!) are the key to prevention.
Incidence of Campylobacteriosis by Age and Sex
Oregon, 2002

Cases/100,000

0-4  5-9  10-19  20-29  30-39  40-49  50-59  60-69  70-79  80+

Age

0  15  30  45

Cases

0  20  40  60  80  100

Month

Jan  Feb  Mar  Apr  May  Jun  Jul  Aug  Sep  Oct  Nov  Dec

Campsylobacteriosis by Report Month
Oregon, 2002

Mean, 1997–2001

2002
Incidence of Campylobacteriosis
Oregon
1993–2002

Incidence of Campylobacteriosis
by County
Oregon, 2002

Campylobacteriosis is not nationally reportable

Cases/100,000

Year

93 94 95 96 97 98 99 00 01 02

0 10 20 30

0

0.01 - 10.9
11.0 - 29.9
30.0 - 49.9
50.0 +
Chlamydiosis

Chlamydiosis is Oregon’s most commonly reported infection. The 7,200 cases reported during 2002 are 304 (4.1%) fewer than 2001. As with gonorrhea and syphilis, *Chlamydia* are transmitted by sexual contact. Chlamydiosis is likely to be a silent infection, with neither men or women having symptoms. However, reproductive health complications, especially among women, lead to infertility and an increased risk of tubal pregnancy.
Chlamydiosis by Report Month
Oregon, 2002

Cases
0
200
400
600
800
1000

Month
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

Mean, 1997–2001
2002

Incidence of Chlamydiosis by Age and Sex
Oregon, 2002

Cases/100,000
0
300
600
900
1200
1500
1800

Age
0-4
5-9
10-19
20-29
30-39
40-49
50-59
60-69
70-79
80+

- Male
- Female
Incidence of Chlamydiosis
Oregon vs. Nationwide
1993–2002

Cases/100,000

Incidence of Chlamydiosis
by County
Oregon, 2002

Note: Wasco and Sherman County rate is for both combined.
Cryptosporidiosis

Cryptosporidiosis is a relatively common parasitic infection that sometimes causes symptoms of watery diarrhea and abdominal cramps. Diagnosed infections typically last 1–2 weeks in immunocompetent persons, but may be unusually protracted. Infections can be difficult to control among the immunocompromised, notably AIDS patients. Repeated studies suggest that the prevalence of cryptosporidiosis among young children, particular those in large child-care facilities, is surprisingly high.

Given the number of asymptomatic and undiagnosed infections, surveillance data can be difficult to interpret, although they have been used to identify a number of outbreaks over the years, most commonly child-care or water-associated (both drinking and recreational). Nothing much exciting happened with crypto in 2002. Theoretical concerns about the possibility of crypto transmission in unfiltered drinking water are leading a number of communities, including Portland, to consider very expensive changes to routine treatment methods.
Incidence of Cryptosporidiosis by Age and Sex
Oregon, 2002

Cryptosporidiosis by Onset Month
Oregon, 2002

Cases/100,000

Mean, 1997–2001

Cases

Age

0-4 5-9 10-19 20-29 30-39 40-49 50-59 60-69 70-79 80+

0 1 2 3

Male

Female
Incidence of Cryptosporidiosis
Oregon vs. Nationwide 1993–2002

Cases/100,000

Year

Incidence of Cryptosporidiosis
by County
Oregon, 2002

Cases/100,000

- 0
- 0.01 - 0.9
- 1.0 - 2.9
- 3.0 +
Over the past 20 years, O157 has emerged from obscurity to become rightly or wrongly perhaps the most dreaded of the 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 has 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.

In 2002 we investigated the largest known O157 outbreak in Oregon history. Over 80 cases were associated with visiting the building housing sheep, goat and other small animal exhibits at the Lane County fair. The exact mode of transmission was never determined, although it was learned that at some point the pathogen became airborne in quantities sufficient to be recovered under the pavilion’s roof weeks after the fair. Organizers have beefed up handwashing facilities at fairgrounds around Oregon this year, and are hoping for the best. More research is necessary to determine if airborne spread is a significant risk to humans. Despite efforts nationally to reduce the levels of meat contamination, the rate of sporadic (i.e., not outbreak-related) cases has been essentially unchanged over the past decade. Person-to-person transmission remains an important source.

### E. coli O157 Infection by Year
Oregon, 1993–2002

![Bar chart showing cases of E. coli O157 infection by year from 1993 to 2002. The chart indicates a fluctuation in the number of cases each year with a peak in 1993 and a notable increase in 2002.]
Incidence of *E. coli* O157 Infection by Age and Sex
Oregon, 2002

Incidence of *E. coli* O157 Infection by Onset Month
Oregon, 2002
Incidence of *E. coli* O157 Infection
Oregon vs. Nationwide
1993–2002

Incidence of *E. coli* O157 Infection
by County
Oregon, 2002
Giardiasis

*Giardia intestinalis*, the flagellated protozoan also known as *G. lamblia* or *G. duodenalis*, is the most commonly identified parasitic pathogen in the US. Surveillance is essential to recognition of disease clusters, frequently associated with day-care facilities and community water systems.

Despite the fact that the majority of infections are asymptomatic, giardiasis is associated with a variety of gastrointestinal complaints, including chronic diarrhea, steatorrhea, abdominal cramps, bloating, frequent loose and pale, greasy stools, fatigue and weight loss. Children in day care and their close contacts are at greatest disease 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 cysts (as few as 10) are ingested through person-to-person or animal-to-person contact, or by ingestion of fecally contaminated water or food.

Despite a decade of decline in reported disease, Oregon’s rate remains above the national, with 12 cases per 100,000 population, 52% in males, and the majority of cases sporadic. Children <5 years old had the highest incidence with 36 cases/100,000, followed by adults 34–49 years with 15 cases/100,000.

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, 1993–2002
Incidence of Giardiasis
by Report Month
Oregon, 2002

Cases

Month

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

Giardiasis
by Age and Sex
Oregon, 2002

Cases/100,000

Age

0-4 5-9 10-19 20-29 30-39 40-49 50-59 60-69 70-79 80+

Mean, 1997–2001

2002
Incidence of Giardiasis
Oregon vs. Nationwide
1993–2002

Cases/100,000

- Oregon
- U.S.

Giardiasis is not nationally reportable; U.S. data were obtained from state case reports published in MMWR, vol. 49, no. 7.

Incidence of Giardiasis
by County
Oregon, 2002

Cases/100,000

- 0
- 0.1 - 9.9
- 10.0 - 19.9
- 20.0 - 29.9
Gonorrhea

Gonorrhea is easily transmitted from person to person through vaginal, rectal and oral sexual contact. The 929 gonorrhea cases reported in 2002 represent a decrease of 19% from the 1,145 cases reported in 2001. If untreated, gonorrhea infections cause a variety of health problems for men, women, and infants. The major complication of gonorrhea is associated with infertility and tubal pregnancies among women. Reported cases of gonorrhea among men who have sex with men increased during 2002. Recent sex partners should be evaluated and treated for gonorrhea.
Incidence of Gonorrhea by Age and Sex
Oregon, 2002

Gonorrhea by Report Month
Oregon, 2002
Incidence of Gonorrhea
Oregon vs. Nationwide
1993–2002

Cases/100,000

Incidence of Gonorrhea
by County
Oregon, 2002
**H. influenzae**

Until the advent of an effective vaccine against serotype b organisms, it was the leading cause of meningitis in children under 5 years of age in Oregon and elsewhere. Today it is well down the listing, with *S. pneumoniae* now in the lead. In Oregon, serotype b organisms have not been cultured in association with invasive infection of normally sterile body fluids in children since 1999. Appropriate utilization of conjugate vaccine will help to ensure that this trend continues well into the future.
Incidence of *H. influenzae* Invasive Disease
All Serotypes
by Age and Sex
Oregon, 2002

![Graph showing incidence of H. influenzae invasive disease by age and sex.](image)

---

*Haemophilus influenzae* Invasive Disease
by Onset Month
Oregon, 2002

![Graph showing cases of H. influenzae invasive disease by month.](image)
Incidence of *H. influenzae* Invasive Disease by County
Oregon, 2002

![Map showing incidence of *H. influenzae* Invasive Disease by county in Oregon, 2002. The map is color-coded to represent different incidence rates.](map_image)

### Legend
- **0**
- **0.01 - 1.1**
- **1.2 - 2.2**
- **2.3 - 3.2**
- **3.3 +**

### Table

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<tr>
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<td>Baker</td>
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<td>Klamath</td>
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<td>Linn</td>
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<tr>
<td>Marion</td>
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<tr>
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<tr>
<td>Wasco</td>
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Hepatitis A

Hepatitis A is a liver disease caused by the hepatitis A virus. Hepatitis A can affect anyone. In Oregon, hepatitis A can occur in situations ranging from isolated cases of disease to widespread outbreaks.

Good personal hygiene and proper sanitation can help prevent hepatitis A. Vaccines are also available for long-term prevention of hepatitis A virus infection in persons 2 years of age and older. Immune globulin is available for short-term prevention of hepatitis A virus infection in individuals of all ages.

Although the number of cases among Oregonians is at a record low, most cases currently reported are acquired by venturing outside of Oregon to areas having poor practices relating to personal hygiene and environmental sanitation. Such persons placing themselves at elevated risk should seriously consider getting a hepatitis A vaccination at least two months prior to departure.
Incidence of Hepatitis A by Age and Sex
Oregon, 2002

**Hepatitis A by Onset Month**
Oregon, 2002

Cases

- **2002**
- **Mean, 1997–2001**

**Incidence of Hepatitis A by Age and Sex**
Oregon, 2002

Cases/100,000

Immunization is recommended for all children in Oregon.
Incidence of Hepatitis A
Oregon vs. Nationwide
1993–2002

Incidence of Hepatitis A
by County
Oregon, 2002

Cases/100,000

- Oregon
- U.S.

Year

1993 94 95 96 97 98 99 00 01 02

Cases/100,000

0 25 50 75 100

0

0.1 - 3.2

3.3 - 6.4

6.5 - 9.9

10+

Columbia
Clatsop
Clackamas
Columbia
Curry
Josephine
Jackson
Klamath
Lake
Lincoln
Linn
Malheur
Marion
Medford
Multnomah
Nehalem
Polk
Pendleton
Roseburg
Eugene
Prineville
Portland
Rogue
Roseburg
Salem
Sheridan
Siltcoos
Smith
Southwest
Tillamook
Umatilla
Umpqua
Vancouver
Wasco
Washington
Yamhill
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, when improperly sterilized injection devices are used for tattooing, body piercing, and acupuncture, and when the baby of a hepatitis B carrier is being born. Acute hepatitis B virus infection (diagnosed by the seropresence of the IgM antibody to the hepatitis B surface antigen [IgM anti-HbsAg]) usually, but not always, causes jaundice. Some infections are mild, even asymptomatic, and may go undetected.

Acute hepatitis B in Oregon declined from 1993 through 1996 — the very end of a decade-long, 72% decline that started here after the hepatitis B vaccine was licensed in 1982 (hepatitis B declined 76% in the US as a whole over the same period of time). The number of cases leveled off in 1997, to about 125 cases per year, except for case-count spikes in 1998 and 2001. An excess number of cases in Lane County (Eugene) accounted for more than half of the case-count spike in 1998 — most of the extra cases were IV drug users. In 2001, four counties (Jackson, Lane, Marion, and Multnomah) accounted for the case-count spike and, again, most of the extra cases were IV drug users. Other interesting details in the figures include high incidence among 30–39 year-old men and the fact that Oregon incidence rate of acute hepatitis B is higher than the incidence rate in the US as a whole (the reasons for this are unclear).

### Hepatitis B (Acute)
**by Year**  
**Oregon, 1993–2002**

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>93</td>
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<tr>
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</tr>
<tr>
<td>01</td>
<td>100</td>
</tr>
<tr>
<td>02</td>
<td>100</td>
</tr>
</tbody>
</table>

![Graph showing cases by year from 1993 to 2002](image-url)
Hepatitis B (Acute) by Onset Month
Oregon, 2002

Cases

Mean, 1997–2001

0
5
10
15
20

Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

Month

Incidence of Hepatitis B (Acute) by Age and Sex
Oregon, 2002

Cases/100,000

0
5
10
15

0-4
5-9
10-19
20-29
30-39
40-49
50-59
60-69
70-79
80+

Age

Male
Female
Incidence of Hepatitis B (Acute)
Oregon vs. Nationwide
1993–2002

Incidence of Hepatitis B (Acute)
by County
Oregon, 2002
Persons with chronic hepatitis B are known as “chronic carriers” — a state of infection which exists when hepatitis B surface antigen (HBsAg) persists 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 US become carriers, compared to some 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 US — 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. In Oregon, 50% of chronic carriers were born in hepatitis-B-endemic countries. Chronic carriers are at greater risk of developing life-threatening diseases (e.g., chronic active hepatitis, cirrhosis, and/or liver cancer) decades later. Carriers will sustain transmission of hepatitis B in the US until vaccine-induced immunity is nearly universal.

The number of chronic carriers reported each year in Oregon is four times the number of acute cases. Keep in mind that these are newly-reported carriers, not people who have newly become carriers. Newly-reported carriers are older than acute cases. Chronic carriers are not reportable in many of the US states, so a table comparing Oregon to the rest of the US is not given.
Hepatitis B (Chronic) by Onset Month
Oregon, 2002

Cases

Mean, 1997–2001

Incidence of Hepatitis B (Chronic) by Age and Sex
Oregon, 2002

Cases/100,000

Male
Female
Incidence of Hepatitis B (Chronic)
Oregon vs. Nationwide
1993–2002

Cases/100,000

<table>
<thead>
<tr>
<th>Year</th>
<th>Oregon</th>
<th>U.S.</th>
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<tr>
<td>02</td>
<td>7</td>
<td>6</td>
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</table>

National figures not available beyond 1998

Incidence of Hepatitis B (Chronic)
by County
Oregon, 2002

Cases/100,000

- 0
- 0.01 - 4.9
- 5.0 - 9.9
- 10.0 - 19.9
- 20.0 +
Lyme Disease

Lyme Disease is a tickborne, spirochetal, zoonotic disease characterized by a distinctive skin lesion, systemic symptoms and neurologic, rheumatologic and cardiac involvement occurring in varying combinations over a period of months to years. The first manifestation in about 60% of patients appears as a red macule or papule that expands slowly in an annular manner, sometimes with multiple similar lesions. This distinctive skin lesion is called erythema migrans (EM). Incubation period for EM ranges from 3 to 32 days after tick exposure; however, the early stages of the illness may be asymptomatic, and the patient may present with later manifestations.

Diagnosis is currently based on clinical findings supported by serologic data, ELISA and Western blot confirmation. In the USA, endemic foci exist along the Atlantic coast concentrated from Massachusetts to Maryland, in the upper Midwest in an expanding focus currently concentrated in Wisconsin and Minnesota, and in the West in California, Oregon and Washington. Currently, increasing recognition of the disease is redefining endemic areas; cases have been reported from 47 states, and from 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. Findings included Ixodes pacificus and its reservoir, the deer mouse. Isolation of the organism was successful as 3.5% of collected ticks tested positive for the spirochete.

Lyme Disease by Year
Oregon, 1993–2002
Lyme Disease
by Onset Month
Oregon, 2002

Incidence of Lyme Disease
by Age and Sex
Oregon, 2002
Incidence of Lyme Disease
Oregon vs. Nationwide
1993–2002

Incidence of Lyme Disease
by County
Oregon, 2002
Malaria

Worldwide, malaria is one of the most devastating of the communicable diseases, causing at least 1,000,000 deaths annually, not to mention an enormous burden of disability and medical costs. While transmission has not been documented in Oregon for decades, malaria remains the most commonly reported vector-borne disease in our state — all cases resulting from exposures outside the United States. Competent anopheline mosquitoes are resident in Oregon, so limited local transmission remains a theoretical possibility. Rates in Oregon are similar to the national average. Surveillance data are contributed to the national database, which is used to tailor recommendations for prophylaxis and treatment.
Malaria by Onset Month
Oregon, 2002

Incidence of Malaria
by Age and Sex
Oregon, 2002
Incidence of Malaria
Oregon vs. Nationwide
1993–2002

Malaria
by Region of Acquisition
Oregon, 2002
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 IgM antibodies in sera (in a patient who has not recently been immunized).

Measles is no longer endemic in the United States; cases are occasionally imported. There were no cases of measles last year in Oregon, and the risk of exposure to measles in Oregon remains low.
Incidence of Measles
Oregon vs. Nationwide
1993–2002

Meningococcal Disease

Reported cases of invasive meningococcal infections, including sepsis and meningitis, have declined from hyperendemic levels seen in 1993–1995 to those observed prior to the advent of the ET5 strain of serogroup B. Respiratory secretions and droplets continue to be shared among Oregonians and predispose to occurrence of secondary cases. Serogroup B organisms comprise about half of all isolates.
Meningococcal Disease by Year
Oregon, 1993–2002

Meningococcal Disease by Onset Month
Oregon, 2002
Incidence of Meningococcal Disease
by Age and Sex
Oregon, 2002

Cases/100,000

- Male
- Female

Incidence of Meningococcal Disease
Oregon vs. Nationwide
1993–2002

Cases/100,000

- Oregon
- U.S.
Meningococcal Disease
by Serogroup
Oregon, 2002

Incidence of Meningococcal Disease
by County
Oregon, 2002
Pertussis

Pertussis is a highly contagious respiratory disease that is transmitted from person to person through direct contact with respiratory secretions (droplet transmission). Despite increasing immunization rates in Oregon children, pertussis holds the dubious distinction of being the only vaccine-preventable disease increasing in incidence. In 2002, Oregon experienced a 25-year high in the number of cases reported. While pertussis is often a mild but lingering illness in adults, it poses significant risk for hospitalization and death of infants (>6 months). In late 2002, Oregon changed its case definition of confirmed pertussis case to include PCR-positive results in a person with a clinical diagnosis of the disease.

![Pertussis by Year](image-url)
Incidence of Pertussis
by Age and Sex
Oregon, 2002
Incidence of Pertussis
Oregon vs. Nationwide
1993–2002

Cases/100,000

Incidence of Pertussis
by County
Oregon, 2002

Cases/100,000

0
0.01 - 4.9
5.0 - 9.9
10.0 - 14.9
15 +
Salmonellosis

*Salmonella* is a bacterial disease commonly manifested by an acute and sudden onset of headache, abdominal pain, diarrhea, and nausea within 12 hours to 5 days after infection. In cases of enterocolitis, fecal excretion usually persists for several days or weeks beyond the acute phase of illness; administration of antibiotics may not decrease the duration of excretion of organisms.

The majority of human infections are through the ingestion of fecally contaminated food or water, or, less often, during food handling by an ill person or a carrier. Undercooked and raw products such as egg, milk meat and poultry have been implicated as a common source of human salmonellosis. A wide range of domestic and wild animals are carriers of *Salmonella*, including poultry, swine, cattle, rodents and pets such as iguanas, tortoises, turtles, terrapins, chicks, dogs and cats. Though rare, person-to-person spread can occur in humans — via patients, convalescent carriers and, especially, mild and unrecognized cases. The incidence rate of infection is highest in infants and young children. *Salmonella* gastroenteritis may occur in small outbreaks in the general population.

Of approximately 2,500 known serotypes, only about 200 are detected in the US in any given year. In Oregon, *S. Typhimurium* and *S. Enteritidis* are the two most commonly reported.
Incidence of Salmonellosis
by Age and Sex
Oregon, 2002

Salmonellosis
by Onset Month
Oregon, 2002
Incidence of Salmonellosis
Oregon vs. Nationwide
1993–2002

Cases/100,000

Year

Oregon

U.S.

Incidence of Salmonellosis
by County
Oregon, 2002

Cases/100,000

0

0.01 - 4.9

5.0 - 9.9

10.0 - 14.9

15 +
## Salmonella by Serotype
### Oregon, 2002

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<th>SEROTYPE</th>
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<th>SEROTYPE</th>
<th>No.</th>
<th>%</th>
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<td>Newport</td>
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<tr>
<td>I B::d:(-)</td>
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<td>Teletelkebir</td>
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<tr>
<td>I E1:e,h:-</td>
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<tr>
<td>I rough: NM</td>
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</table>
Shigellosis

Shigellosis is an acute bacterial infection characterized by (sometimes bloody) diarrhea, vomiting, and abdominal cramps. Humans are the only known reservoir. It 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 limit its transmission and prevent further spread. The rate is higher among children 1–4 years of age. The incidence of shigellosis usually increases in late summer and fall. Outbreaks in day care centers are common, mainly due to poor hygienic practices of small children. Hand washing is the most important means of prevention.

The incidence of shigellosis has been decreasing in recent years, with the exception of the year 2000, when a multi-state outbreak associated with 5-layer party dip occurred. In 2002, over half of the cases were due to *S. sonnei*, and about a quarter were due to *S. flexneri*. 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.
Incidence of Shigellosis
by Age and Sex
Oregon, 2002

Cases/100,000

Age

0-4 5-9 10-19 20-29 30-39 40-49 50-59 60-69 70-79 80+

0 4 8 12 16

Male
Female

Shigellosis
by Onset Month
Oregon, 2002

Cases

Month

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec

0 5 10 15 20 25

2002
Mean, 1997–2001
Incidence of Shigellosis
Oregon vs. Nationwide
1993–2002

Shigellosis
by Species
Oregon, 2002
Incidence of Shigellosis
by County
Oregon, 2002

Early Syphilis

Early syphilis cases are an aggregate of primary, secondary and early latent cases under one year duration. Early syphilis cases represent recent transmission via sexual contact, vaginal, rectal or oral sex. The 47 early syphilis cases reported in 2002 are over double the cases reported in 2001 (22) and the greatest number reported since 1993. It is important to identify and treat persons with early syphilis to prevent late complications, such as brain and heart damage, and to prevent congenital infections. People with primary and secondary syphilis more easily acquire and transmit HIV. An effective way to limit the spread of syphilis is to evaluate and treat recent sex partners of people with early syphilis. The majority of the early syphilis cases reported during 2002 were among men who have sex with men and communities of color.
Early Syphilis
by Year
Oregon, 1993–2002

Early Syphilis
by Report Month
Oregon, 2002
Incidence of Early Syphilis by Age and Sex
Oregon, 2002

Cases/100,000

0.01 - 1.0
1.1 - 2.9
3.0 +
**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 a person develops active pulmonary or laryngeal TB, coughs the bacteria into the air, and another person inhales them into their lungs.

TB is preventable, treatable, and curable. TB can be prevented by diagnosing and treating persons with active TB disease; and 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 contacts are identified and offered preventive antibiotics.

A total of 111 cases of active TB disease were verified in Oregon in 2002, for a rate of 3.5 cases per 100,000 residents. Ten percent of Oregon patients’ mycobacterial isolates were resistant to isoniazid (INH); therefore, we recommend that initial treatment for active TB in Oregon include four drugs: INH, rifampin, pyrazinamide, and ethambutol pending susceptibility testing.

The Oregon TB rate of 3.5/100,000 meets the Healthy People 2000 Goal of ≤3.5/100,000; however, reduced morbidity leads to decreased awareness and delays in diagnosis and treatment.
Tuberculosis
by Onset Month
Oregon, 2002

Cases

Month

Tuberculosis
by Onset Month
Oregon, 2002

Mean, 1997–2001

The high mean figure for December is due to a reporting artifact

Incidence of Tuberculosis
by Age and Sex
Oregon, 2002

Cases/100,000

Age

Male
Female

0-4 5-9 10-19 20-29 30-39 40-49 50-59 60-69 70-79 80+

0 4 8 12
Incidence of Tuberculosis
Oregon vs. Nationwide
1993–2002

Cases/100,000

Year

Tuberculosis
by Race/Ethnicity
Oregon, 2002

- White
- Black
- Hispanic
- American Indian/Alaskan Native
- Asian/Pacific Islander
Tuberculosis by Country of Origin
Oregon, 1993–2002

Incidence of Tuberculosis by County
Oregon, 2002

Note: Wasco and Sherman County rates are combined.
**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, flies, and mosquitoes; and in contaminated soil, water, and animal carcasses. Biovar type A is the most common type in North America and is highly virulent; as few as 10–50 organisms can cause disease.

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 75–85% of naturally-occurring cases. Other clinical forms of the disease include: pneumonic (pulmonary symptoms); typhoidal (GI symptoms and sepsis); glandular (regional adenopathy without skin lesion), oculoglandular (painful purulent conjunctivitis with adenopathy), and oropharyngeal (pharyngitis with adenopathy).

Tularemia occurs throughout the US. People become infected primarily through handling contaminated animals; the bite of infective deer flies, mosquitoes, or ticks; direct contact or ingestion of contaminated food, water, soil; or through inhalation of infective aerosols. From 1993–2002, 23 cases of tularemia were reported in Oregon (range, 1–5 per year). Cases occurred in residents of 12 counties, and were evenly spread across age groups.

---

**Tularemia**

**by Year**

**Oregon, 1993–2002**
Incidence of Tularemia by County
Oregon, 1993–2002

Tularemia by Onset Month
Oregon, 2002

Cases

Month

Cases/100,000

0
0.01 - 4.9
5.0 - 9.9
10 - 19.9
20 +
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, and 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. The rate is slightly higher in 2002 compared to the previous two years. Yersiniosis occurs throughout the year with no seasonality. By far the most common species is *Y. enterocolitica*.
Incidence of Yersiniosis
by Age and Sex
Oregon, 2002

Yersiniosis
by Onset Month
Oregon, 2002
Incidence of Yersiniosis by County
Oregon, 2002

Yersiniosis by Species
Oregon, 2002

Cases/100,000

- enterocolitica
- pseudo-tuberculosis

Incidence of Yersiniosis by County
Oregon, 2002
<table>
<thead>
<tr>
<th>Year</th>
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<th>Campylobacteriosis</th>
<th>E. coli O157 Infection</th>
<th>Giardiasis</th>
<th>Hepatitis A</th>
<th>Hepatitis B</th>
<th>Hepatitis C; NANB</th>
<th>Listeria</th>
<th>Meningococcal Disease</th>
<th>Pertussis</th>
<th>Malaria</th>
<th>Measles</th>
<th>Meningococcal Disease</th>
<th>Typhoid fever</th>
<th>Tularemia</th>
<th>Tuberculosis</th>
<th>Tuberculosis</th>
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Selected Cases of Notifiable Diseases by County, Oregon, 2002
Reported Disease Outbreaks
Oregon, 2002

Outbreaks: 93
Causal agents:

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