

CD

Summary

Contact: 971-673-1111 | cd.summary@state.or.us | www.healthoregon.org/cdsummary

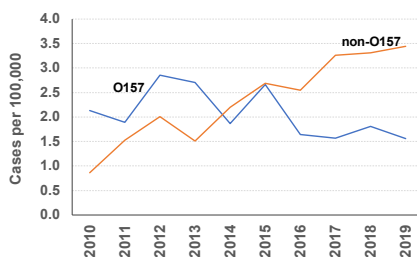
EBBS AND FLOWS OF COMMUNICABLE DISEASES: OREGON 2019

Laboratories and health care professionals are required by Oregon law to report diseases of public health importance to public health authorities. Public health officials investigate these reports of communicable disease to characterize the illness, collect demographic information, and identify possible sources of infection. This allows public health to take steps to prevent further disease transmission and to monitor trends in communicable disease across the state. This *CD Summary* presents notable trends in the diseases reported during 2019.

SHIGA TOXIN STORM

Shiga toxin-producing *Escherichia coli* (STEC) infection causes gastroenteritis – it is often characterized by bloody diarrhea and in severe cases, illness can lead to post-diarrheal hemolytic uremic syndrome (HUS). *E. coli* O157:H7 is the most common strain of STEC, though there are many non-O157 strains as well. In Oregon in 2019, 354 cases were reported, a notable increase from the 315 and 217 cases in 2018 and 2017, respectively. Sixty-six (31%) of the STEC cases in 2019 were O157. The rate of O157 STEC infections in Oregon has been gradually declining over the past decade, while the rate of non-O157 STEC infections has continued to climb (Figure 1). In 2019, the rate

Figure 1. Incidence rate of shiga toxin-producing *E. coli* (STEC) by serotype, Oregon, 2010–2019



of non-O157 STEC cases reached a new high of 3.4 per 100,000 people, compared to 1.6 for O157 STEC cases. Incidence of infection is higher in children <5 years of age. Historically, the rate of STEC infections in Oregon has been higher than the rate in the rest of the U.S. and this remained true in 2019 — Oregon experienced nearly double the rate of STEC cases compared to other states.¹ There were four outbreaks of STEC investigated in Oregon in 2019: one outbreak associated with beef products sold at a grocery chain that resulted in 65 cases, two additional foodborne outbreaks, and one outbreak associated with animal contact. All four were outbreaks of the O157:H7 strain.

RESPIRATORY UNREST

Legionellosis is an acute respiratory tract infection following exposure to *Legionella spp.* It varies in severity from a mild febrile illness to a serious and sometimes fatal form of pneumonia. *Legionella* bacteria are found naturally in the environment and are transmitted by inhalation of aerosolized water or soil infected with the bacteria. Person-to-person transmission does not occur. There was a dramatic spike in legionellosis cases in Oregon in 2019, with 73 cases, compared to only 40 cases in 2018. At the same time, national cases of legionellosis declined in 2019 after years of a steady rise in cases. The cause of the rise in Oregon in 2019 remains unknown; investigations did not identify any clusters. However, increases in older persons and those with underlying disease, aging plumbing infrastructure, and increased testing, detection and reporting may have played a role. Among the 73 cases in 2019, 97% were hospitalized and there were eight deaths.

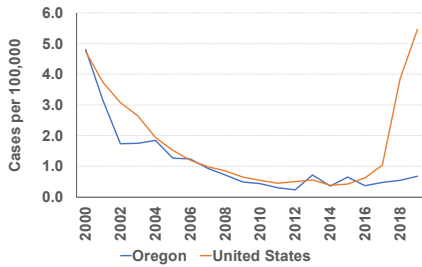
Measles is an acute, highly communicable viral illness. The hallmark of the disease is a red, blotchy rash that starts on the face and then spreads widely over the body. The rash is preceded by a febrile prodrome that includes cough, coryza, and conjunctivitis. Efforts to increase vaccination among preschool children since 1989 has resulted in dramatic reduction in measles in the United States. In 2019, about 96% of K-12 kids in Oregon received two doses. Although the risk of exposure to measles in Oregon remains low, 2019 saw a large increase in measles cases; the highest count in 28 years. In fact, Oregon's incidence surpassed the rate in the rest of the U.S. for the first time since 2013 (0.7 cases per 100,000 in Oregon compared to 0.4 cases per 100,000 people in the rest of the U.S.).¹ The median age of cases has been 12.5 years (range, 6 months–49 years) since 2004. Four outbreaks of measles accounted for 27 of the 28 cases in 2019: two community-wide outbreaks, one at a missionary training school, and one associated with a flight. All cases in 2019 were import-linked cases (linked to an internationally imported case), and all were unvaccinated.

HEPATITIS A COUNTS CLIMB

Hepatitis A is a liver disease caused by the hepatitis A virus, which is transmitted via the fecal-oral route. Historically, Oregon had one of the higher state incidence rates of hepatitis A in the U.S.; however, the number of hepatitis A cases declined both nationally and in Oregon following the licensure of the hepatitis A vaccine in 1995–1996. Oregon's case count declined from 165 cases in 2000 to only 9 cases in 2012, but it has been gradually rising since that time, up to 28 cases in 2019. Despite this trend in recent years, the rate of hepatitis A cases in Oregon remains

well below that of the rest of the U.S. (Figure 2).¹

Figure 2. Incidence rate of hepatitis A in Oregon and the rest of the United States, 2000–2019

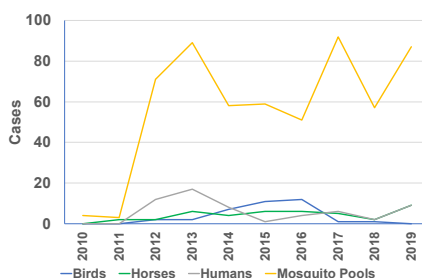


Since 2017, the U.S. has been experiencing widespread person-to-person outbreaks of hepatitis A across the country, resulting in a steep surge in national case rates.² The 28 cases Oregon saw in 2019 included a cluster of 5 hepatitis A cases in a high-risk population reporting injection drug use and unstable housing in Central Oregon. Ten of the 28 cases in 2019 were acquired outside of Oregon or from household members who recently traveled outside of Oregon.

WHAT IS UP WITH WEST NILE?

Over the past 10 years, the incidence rate of WNV in Oregon has been highest in SE Oregon, especially Malheur County (9.8 cases per 100,000 people) and Harney County (8.1 cases per 100,000 people). Animal surveillance for WNV found more animal cases of WNV compared to previous years, with 9 horses and 87 mosquito pools testing positive for WNV in 2019 (Figure 3). 2019 also saw an increase in human cases of WNV relative to the previous year, with a total of nine cases. Eight of them were locally acquired and one was imported. Only one in five humans infected with WNV will develop symptoms – typically flu-like symptoms such as fever, headache and muscle aches.

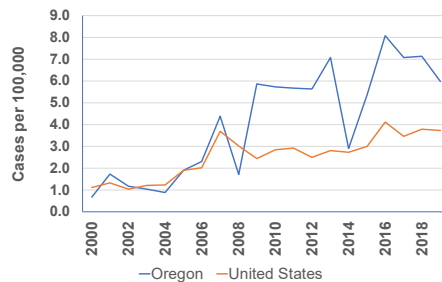
Figure 3. West Nile virus by species, Oregon, 2010–2019



EBBS IN ENTERIC DISEASES

Cryptosporidiosis results from infection with protozoal parasite of the genus *Cryptosporidium* and is characterized by watery diarrhea and abdominal cramps. The rate of cryptosporidiosis in Oregon has been generally inclining since 2000; however, there has been a gradual decline in cases since reaching a peak of 329 in 2016 – Oregon recorded 253 cases of cryptosporidiosis in 2019. The case rate in Oregon continues to remain above the rate in the rest of the U.S. (Figure 4).¹ Rapid cartridge tests and culture independent diagnostic testing for *Cryptosporidium* might be playing a role in the apparent increase in incidence for the past decade.

Figure 4. Incidence rate of cryptosporidiosis in Oregon and the rest of the United States, 2000–2019

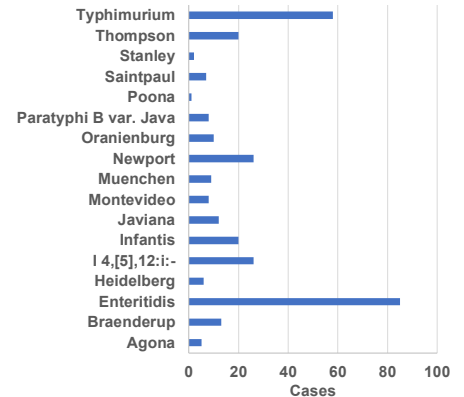


Giardiasis is caused by infection with the flagellated protozoan *Giardia intestinalis*. While most infections occur without symptoms, *Giardia* cysts can be excreted in the stool intermittently for weeks or months, resulting in a prolonged period of communicability. Children in daycare and their close contacts, backpackers and campers, persons drinking from shallow wells, travelers to disease-endemic areas and men who have sex with men are at greatest risk. While giardiasis in Oregon (6.9 per 100,000 people in 2019) remains elevated above the rest of the U.S. (4.0 per 100,000 people in 2019)¹, cases have been gradually declining since 2010 and were down to 291 cases in 2019.

Salmonellosis is a bacterial illness characterized by acute abdominal pain, diarrhea and often fever. Symptoms typically begin one to five days after exposure, but excretion of *Salmonella* may persist for several days or even months beyond the acute illness. Since 2000, salmonellosis cases have been generally inclining in Oregon, reaching

a peak of 582 cases in 2018. In 2019, however, this number decreased to 460 cases (10.9 cases per 100,000 people), mirroring a drop in case rates in the rest of the U.S.¹ and keeping Oregon below the national average. Despite this, there were nine outbreaks of salmonellosis investigated in 2019, which accounted for 64 of the 460 cases in Oregon. Of the 460 cases, 406 had lab-confirmed isolates, from which 64 different *Salmonella* serotypes were identified (Figure 5).

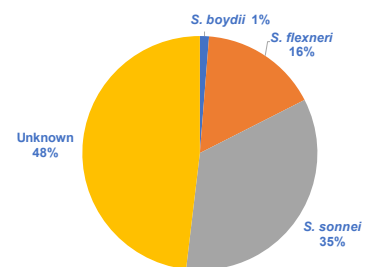
Figure 5. *Salmonella* cases by selected* serotypes, 2019*



*Selected because at least one case was reported in 2019 and it is a more common serotype.

Shigellosis is an acute bacterial infection, and in Oregon, it is typically caused by *S. sonnei* or *S. flexneri* (Figure 6). The illness is characterized by diarrhea (sometimes bloody), vomiting, abdominal cramps and fever. After a large spike in cases led to a record case count of 289 in 2018, cases decreased again in 2019 with 160 cases of shigellosis recorded in Oregon. The high case count in 2018 was due, in part, to a large foodborne outbreak. With the exception of 2018, the case rate of shigellosis cases in Oregon remains below that of the rest of the U.S.¹

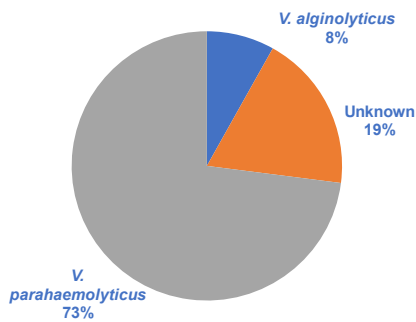
Figure 6. Shigellosis cases by species, Oregon, 2019



Vibriosis is caused by infection with bacteria from the *Vibrionaceae* family, which includes the species that

causes cholera. Vibriosis is often acquired by eating raw or undercooked molluscan shellfish, although non-foodborne infection with *Vibrio* species can also occur through contact with sea or brackish water. In Oregon, *V. parahaemolyticus* is the most frequently reported species (Figure 7) and it is found naturally in the coastal waters and shellfish of the Pacific Northwest.

Figure 7. Vibriosis cases by species, Oregon, 2019



Oregon recorded a record high number of vibriosis cases in 2018 (67), but cases declined again in 2019 with 37 cases reported (0.9 cases per 100,000 people). The case rate in Oregon remains slightly elevated above the case rate in the rest of the U.S.¹ Almost half of 2019 cases were initially detected from a polymerase chain reaction (PCR) test. In 2018, Oregon changed the case definition for *Vibrio* infections to exclude some of these PCR tests, in an attempt to mitigate the problem. Not all the increase in cases can be attributed to changes in culture independent diagnostic testing, however, 30 out of 37 reports in 2019 were culture confirmed.

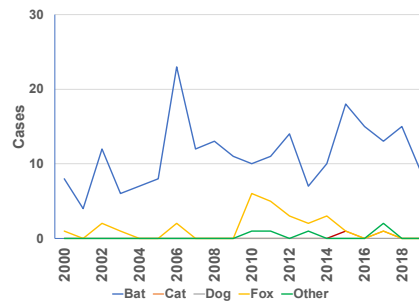
DECLINES IN ZOOONOTIC DISEASES

Lyme disease is a tick-borne zoonotic disease caused by the spirochete *Borrelia burgdorferi*. In most cases, the tick must be attached for 36-48 hours or more before the bacterium can be transmitted and the incubation period ranges from 3 to 30 days after exposure. Cases have been reported in 49 states and in Ontario and British Columbia, Canada. Following a record number of cases in 2017 (89), cases declined to 65 reported in 2019; however, there is an overall increasing trend relative to earlier in the decade. The median

age of cases in 2019 was 40 years of age. Fifty-two (63%) cases were female. The rate of Lyme disease cases in Oregon (1.5 per 100,000 people in 2019) continues to remain well below the rate in the rest of the U.S. (10.4 per 100,000 people).¹

Rabies is an acute infection of the central nervous system caused by a neurotropic rhabdovirus of the genus *Lyssavirus*. All mammals are susceptible to rabies and in humans, it causes rapidly progressive and fatal encephalomyelitis. Bites from infected animals constitute the primary route of transmission. Oregon (and the rest of the Pacific Northwest) is considered to be free of terrestrial rabies — the main reservoir of rabies in Oregon is bats. Rabies in humans is rare and is 100% preventable through prompt appropriate medical care, but public health monitors rabies in animal populations as well. In 2019, despite testing similar numbers of animals that potentially exposed humans to rabies, the number of positive animal cases decreased to nine, all of which were in bats (Figure 8). The rate of animal rabies cases in Oregon continues to remain well below the national rate in the rest of the U.S.¹

Figure 8. Animal rabies cases by species, Oregon, 2000–2019



MORE HIGHLIGHTS FROM 2019

In 2019, Oregon recorded the lowest number of cases of meningococcal disease in this millennium – only 11 cases were reported. The case rate in Oregon has been steadily decreasing since 2000 and in 2019, neared the case rate in the rest of the U.S. While cases of invasive *Haemophilus influenzae* disease (IHiD) remained relatively stable in Oregon in 2019, there were no cases of *Haemophilus influenzae* serotype b (Hib) infection. Until the advent of an effective vaccine against Hib, *H.*

influenzae was the leading cause of bacterial meningitis in children under 5 years of age in Oregon and elsewhere. Continued use of conjugate vaccine will help ensure Hib infection remains minimal well into the future. Cases of yersiniosis in Oregon have been elevated since 2013 and climbed further in 2019, reaching 53 cases. The increase in cases spanned all age, race, and sex categories.

CONCLUSION

Thank you for reporting to public health. Check out the complete 2019 report below.

FOR MORE INFORMATION:

- [2019 Communicable Disease Annual Report](#) (Tableau)
- [Case counts by county of residence \(2019\)](#) (Tableau)
- [Select diseases by year \(2000-2019\)](#) (Tableau)

RESOURCES

1. Centers for Disease Control and Prevention. National Notifiable Diseases Surveillance System, Weekly Tables of Infectious Disease Data. Atlanta, GA. CDC Division of Health Informatics and Surveillance. Available at: www.cdc.gov/nndss/infectious-tables.html.
2. Centers for Disease Control and Prevention. Widespread outbreaks of Hepatitis A across the United States. Available at: www.cdc.gov/hepatitis/outbreaks/2017March-HepatitisA.htm



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