

Central Oregon Public Health Quarterly

Communicable Disease Update for Crook, Deschutes, and Jefferson Counties
First Quarter Report, 2020

24/7 Communicable Disease reporting lines: Crook County: 541-447-5165 Deschutes County: 541-322-7418 Jefferson County: 541-475-4456

2019 Communicable Diseases Year-in-Review

The table below summarizes 2019 case counts and estimated rates for select reportable communicable diseases with Central Oregon regional case counts of 5 or higher. Diseases are listed in order of prevalence in Central Oregon in 2019. Five-year rates and average annual case counts for 2014-2018 are also provided for comparison.

Communicable Disease Case Counts and Rates								
Reportable Disease or Condition	2019				2014-2018			
	Oregon		Central Oregon		Oregon		Central Oregon	
	Case count	Rate per 100,000 population	Case count	Rate per 100,000 population	Average annual case count	5-year rate per 100,000 population	Average annual case count	5-year rate per 100,000 population
Chlamydia	19,248	454.3	923	384.1	17,323.6	424.0	780.4	350.5
Hepatitis C (chronic)	5,127	121.0	268	111.5	5,794.8	141.8	300.0	134.8
Gonorrhea	6,134	144.8	128	53.3	4,169.6	102.0	91.4	41.1
Campylobacteriosis	1,024	24.2	113	47.0	967.2	23.7	81.0	36.4
Pertussis	426	10.1	72	30.0	387.8	9.5	26.6	11.9
Salmonella (non-typhoidal)	460	10.9	37	15.4	489.0	12.0	26.0	11.7
E. coli (STEC)	354	8.4	31	12.9	227.6	5.6	24.6	11.0
E. coli (ETEC)	70	3.9	30	12.5	<i>Newly Reportable in 2018</i>			
Cryptosporidiosis	253	6.0	27	11.2	250.2	6.1	10.2	4.6
Giardiasis	291	6.9	24	10.0	340.8	8.3	26.4	11.9
Yersinia	53	1.3	15	6.2	118.0	2.9	11.4	5.1
CRE	164	3.9	7	2.9	118.0	2.9	11.4	5.1
Hepatitis B (chronic)	374	8.8	6	2.5	467.4	11.4	8.2	3.7
Vibriosis	37	0.8	6	2.5	35.2	0.9	4.6	2.1
Legionellosis	73	1.7	5	2.1	45.0	1.1	1.2	0.5

Case counts include both confirmed and presumptive cases. Case counts are preliminary as of February 1, 2020. 2019 rates calculated using 2019 mid-year population estimates from the Population Research Center at Portland State University. 2014-2018 rates calculated using American Community Survey population estimates.

Note: E. coli is the abbreviation for Escherichia coli bacteria. STEC is the abbreviation for Shiga-toxin producing E. coli and ETEC is the abbreviation for Enterotoxigenic E. coli. CRE is the abbreviation for Carbapenem-resistant Enterobacteriaceae.

Central Oregon Year-in-Review Highlights

- In 2019, over a quarter of all statewide cases of Yersiniosis occurred in Central Oregon.
- Chlamydia and gonorrhea rates in Central Oregon rose 10% and 29% respectively compared to the 2014-2018 5-year rates. Despite this increase, Central Oregon rates are still below Oregon rates for both diseases.
- Campylobacteriosis is the fourth most common reportable disease in Central Oregon. The rate (47.0 cases per 100,000) in Central Oregon was nearly double the Oregon Rate (24.2 cases per 100,000) and has increased from the Central Oregon 5-year rate (36.4 cases per 100,000).
- E. coli (ETEC) became reportable in 2018. Central Oregon had 30 cases which represent 43% of all cases reported across Oregon. The Central Oregon rate of E. coli (ETEC) (12.5 cases per 100,000) was around 3 times the Oregon rate (3.9 cases per 100,000).
- The Central Oregon Pertussis rate in 2019 (30.0 cases per 100,000) is more than double the Central Oregon 5-year rate (11.9 cases per 100,000). **Please refer to the back of this page for more information on Pertussis.**

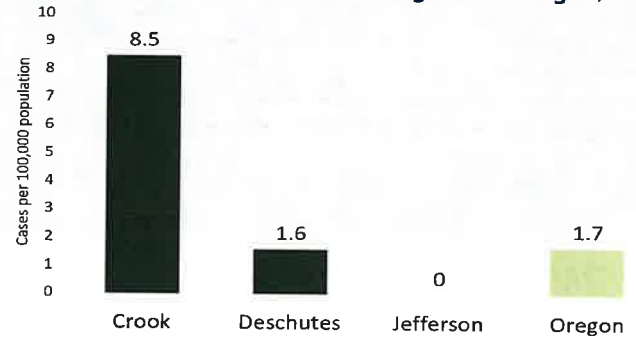
Notable Disease Differences by County - 2019

Legionellosis and CRE rates are higher in Crook County than in Deschutes and Jefferson Counties (see graphs to the right). Crook County's CRE rate is lower than Oregon but its Salmonella rate is ~23% higher than Oregon. Legionellosis rates in increased in Crook County between 2018 and 2019, but Deschutes and Jefferson Counties' rates remained the same. CRE rates decreased in all three counties between 2018 and 2019.

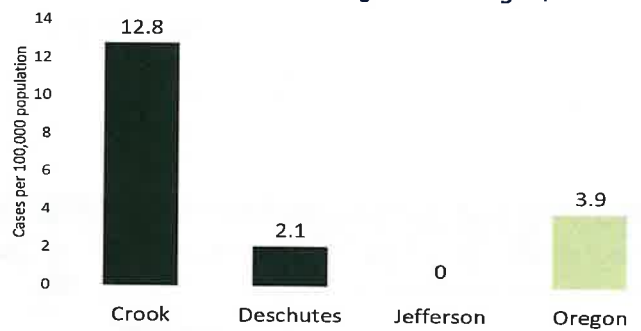
Other notable differences between the three Central Oregon counties this year were seen for Salmonellosis and Cryptosporidiosis. The rate of Salmonellosis in Jefferson County (38.2 cases per 100,000) is more than double the rate in Deschutes County (14.3 cases per 100,000). Crook County had too few cases to estimate a reliable rate in 2018.

The rate of Cryptosporidiosis in Crook County (26.4 cases per 100,000) is more than 3 times the rate in Deschutes County (7.4 cases per 100,000). Jefferson County had too few cases to estimate a reliable rate in 2018.

Legionellosis rates in Central Oregon and Oregon, 2019



CRE rates in Central Oregon and Oregon, 2019



Disease Spotlight: Pertussis

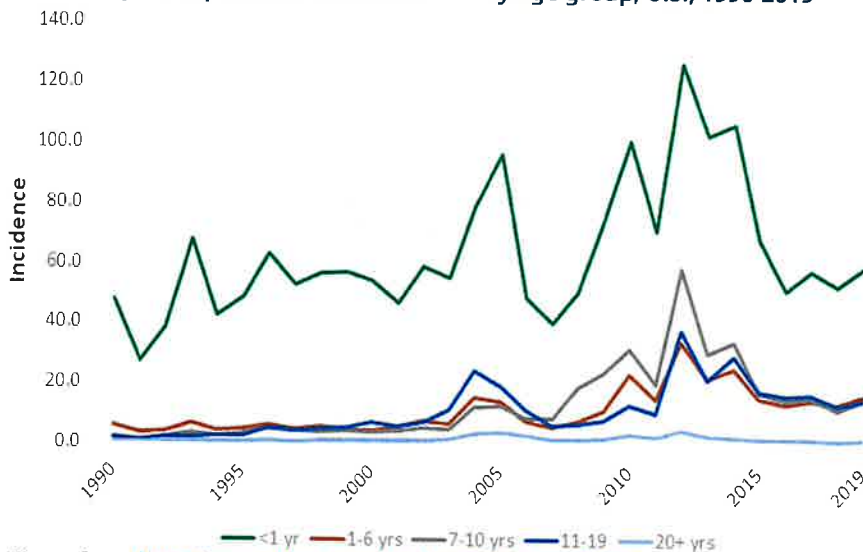
Pertussis (whooping cough), is a highly contagious respiratory disease characterized by a persistent cough that last over 2 weeks, a "whooping" sound at the end of a coughing fit, and known exposure to a confirmed case. Pertussis is a nationally notifiable disease, although not all cases are diagnosed and therefore not reported.

Prior to 2019, pertussis rates in Central Oregon were typically lower than Oregon with exception of 2014-2015. In 2019, the Central Oregon rate (30.0 cases per 100,000) is almost three times the Oregon rate (10.1 cases per 100,000). A similar disparity was observed in 2014.

Pertussis rates by year, 2008-2019



Reported pertussis incidence rate by age group, U.S., 1990-2019



Pertussis is transmitted person to person through respiratory droplets containing a type of bacteria (*Bordetella pertussis*).

The graph to the left shows the nationwide incidence of reported pertussis cases per 100,000 by age group from 1990-2019.

Infants aged under 1 year are the most at risk for serious disease and mortality, also consistently have the highest incidence of reported pertussis cases.

Figure from: <https://www.cdc.gov/pertussis/surv-reporting.html>

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Communicable Disease Update for Crook, Deschutes, and Jefferson Counties
Second Quarter Report, 2020

24/7 Communicable Disease reporting lines:

Crook County: 541-447-5165

Deschutes County: 541-322-7418

Jefferson County: 541-475-4456

Overview of 2019-2020 Central Oregon Flu Season

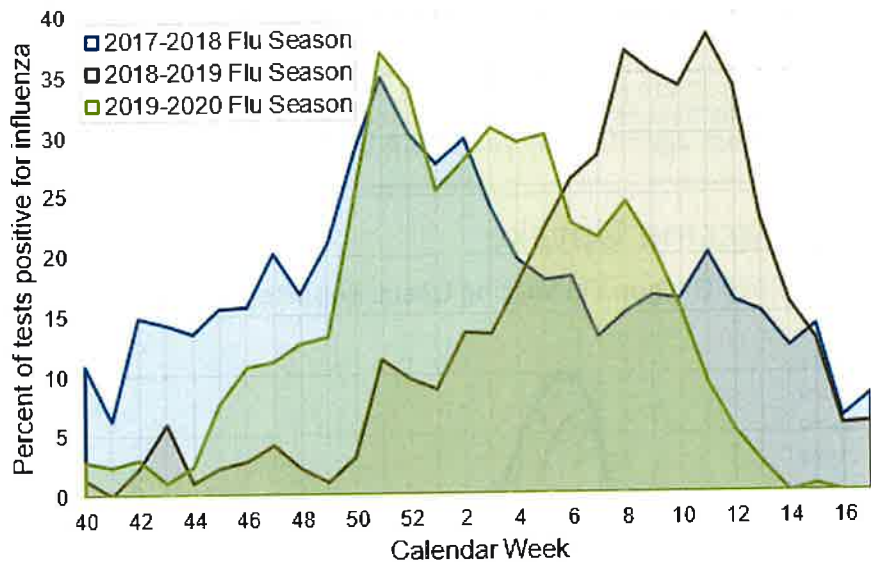
Flu in Central Oregon peaked earlier than last season.

According to data collected from local Central Oregon labs, 2019-2020 flu season activity (shown in green) peaked during calendar week 51 (December 13 through December 19), followed by a steady decline in flu activity.

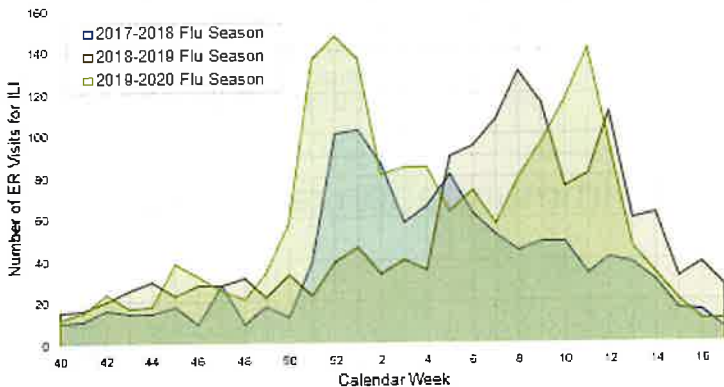
Flu season peaked around around the same time as 2017-2018 season and 12 weeks earlier than the 2018-2019 season.

This variability across flu seasons highlights the importance of regular local surveillance to identify when flu activity is increasing in our area.

Percent of reported flu tests positive by week, 2017-2020



Weekly Number of ER visits for influenza-like illness among Central Oregon residents, 2017-2020



Data Source: ESSENCE syndromic surveillance system. Includes visits by Crook, Deschutes, and Jefferson County residents to any ER across Oregon.

This flu season appears to have been less severe than last season.

According to CDC, the 2019-2020 flu season had a lower number of estimated hospitalizations than any season since CDC began making these estimates*.

Among Central Oregon residents, there were around 1,800 total emergency room (ER) visits for influenza-like illness (ILI) this season, compared to around 1,500 total visits for ILI last season. The number of weekly ILI visits peaked at 147 during calendar week 52 (December 22 through December 28). Last season's peak occurred during calendar week 8 (130 visits), and the 2017-2018 season's peak occurred during week 1 (176 visits).

* Centers for Disease Control and Prevention. (2020, December 3). Preliminary In-Season 2019-2020 Flu Burden Estimates. <https://www.cdc.gov/flu/about/burden/preliminary-in-season-estimates.htm>

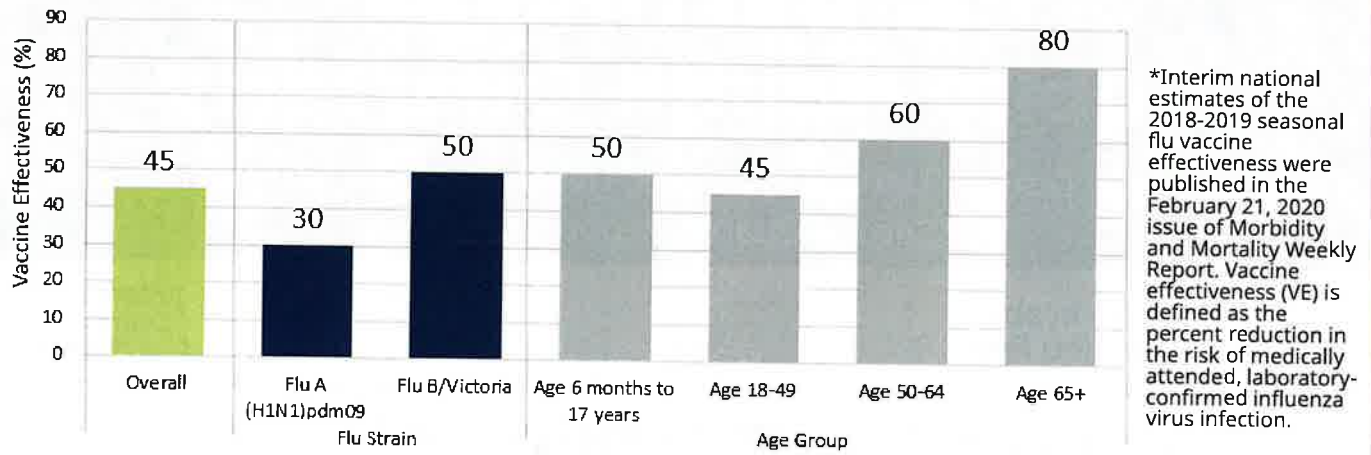
There were two reported flu outbreaks this season in Central Oregon.

Both flu outbreaks occurred in long term care facilities. The number of flu outbreaks reported this season is lower than the number reported last season (5). Statewide, there were 93 flu outbreaks this season as of May 1, around 64% of which occurred in long term care facilities.

Across Oregon as a whole, there were no flu-associated pediatric deaths reported so far this flu season.

Nationwide, there have been 169 flu-associated pediatric deaths reported so far this season, which is lower than the 2018-2019 season (199) and higher than the 2017-2018 season (114).

Flu Vaccine Effectiveness Estimates, 2019-2020 Flu Season



Overall vaccine effectiveness (VE) this season was estimated to be 45%*. Over the past ten flu seasons, overall VE has ranged from 19% (2014-2015 season) to 60% (2010-2011 season).

As shown above, VE for Flu A (H1N1)pdm09 (30%) and is lower than for Flu B / Victoria (50%). There is no available estimate for Flu A (H3N2) VE for the 2019-2020 season. Overall VE estimates varied by age group. Vaccine effectiveness estimates were highest among those aged 65 years and older (80% VE) and lowest among those aged 18 to 49 years (45% VE).

Flu Vaccine Uptake

2019-2020 Oregon Flu Vaccine Doses Reported by Week

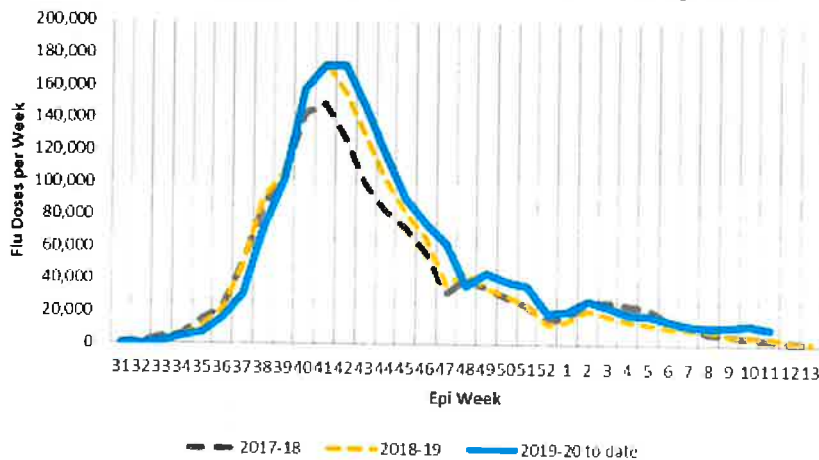


Figure source: Oregon Health Authority

As of mid-March, the Oregon Health Authority (OHA) observed that rates of new influenza immunization per week continue to run above prior seasons.

Around 1.7 million flu vaccines were administered to Oregon residents, which is higher than the 1.5 million administered during the 2018-2019 flu season and the 1.37 million administered during the 2017-2018 flu season.

The peak week for Oregonians to receive a flu vaccine was during week 41 (October 7 through October 13).

Despite the decline observed in mid-October, rates of new immunizations per week remained slightly above what is normally seen at this time of year.

Mid-season preliminary seasonal flu immunization rates by age

In January, Oregon Health Authority provided preliminary estimates of the season adult flu immunization rates by age.

Oregonians over age 65 have the highest flu immunization rate (64.9%), followed by those age 50 to 64 (43.8%) and those age and 4 or younger (40.7%).

Oregonians age 10 to 17 have the lowest immunization rate (27.4%).

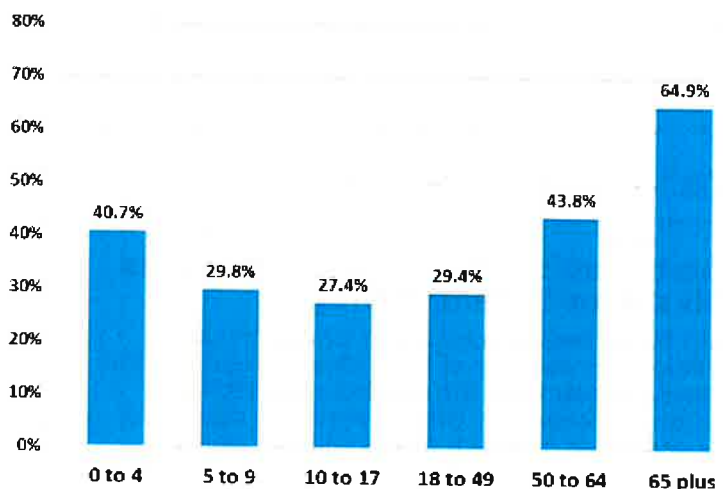


Figure source: Oregon Health Authority

Central Oregon Public Health Quarterly

Communicable Disease Update for Crook, Deschutes, and Jefferson Counties
Third Quarter Report, 2020

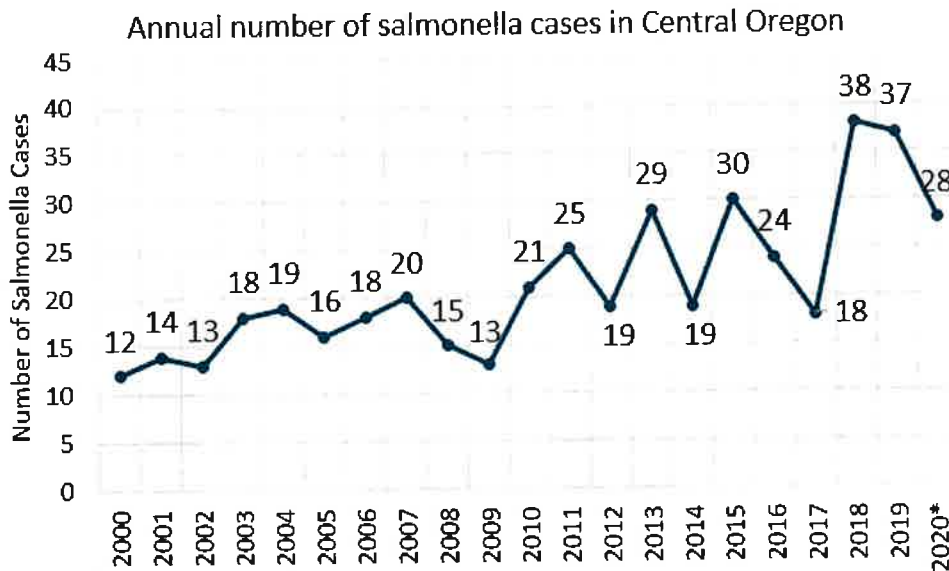
24/7 Communicable Disease reporting lines:

Crook County: 541-447-5165

Deschutes County: 541-322-7418

Jefferson County: 541-475-4456

Salmonellosis in Central Oregon by Year



The number of Salmonellosis cases varies by year in Central Oregon, with peaks seen every 2-3 years.

There were a total of 446 cases in Central Oregon between 2000 and September of 2020. The number of cases each year has ranged from a low of 12 cases in 2000 to a peak of 38 cases in 2018. In 2020 (as of late September), there were 28 cases of salmonellosis in Central Oregon.

Most (78.7%) salmonellosis cases in Central Oregon were among Deschutes County residents, followed by Jefferson County (10.8%) and Crook County (10.5%).

*2020 data is year-to-date as of September 30, 2020

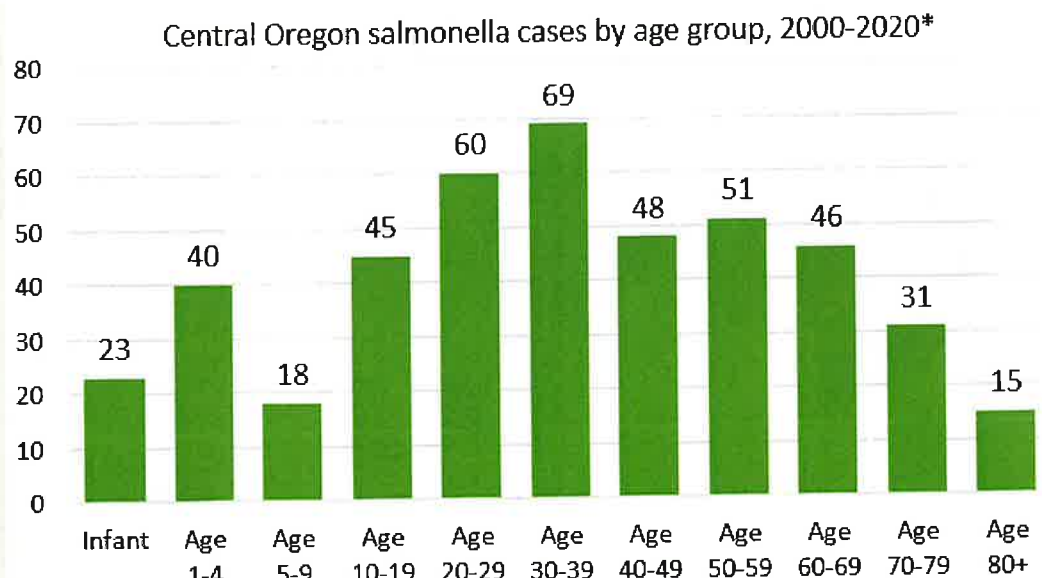
Salmonellosis in Central Oregon by Age Group

Most cases of salmonella in Central Oregon are adults aged 20 to 39.

Around 78.7% of salmonellosis cases in Central Oregon were aged ≥ 20 , and around 40% of cases were aged < 10 .

There were 21 infant cases under the age of 1, representing around 7.7% of cases.

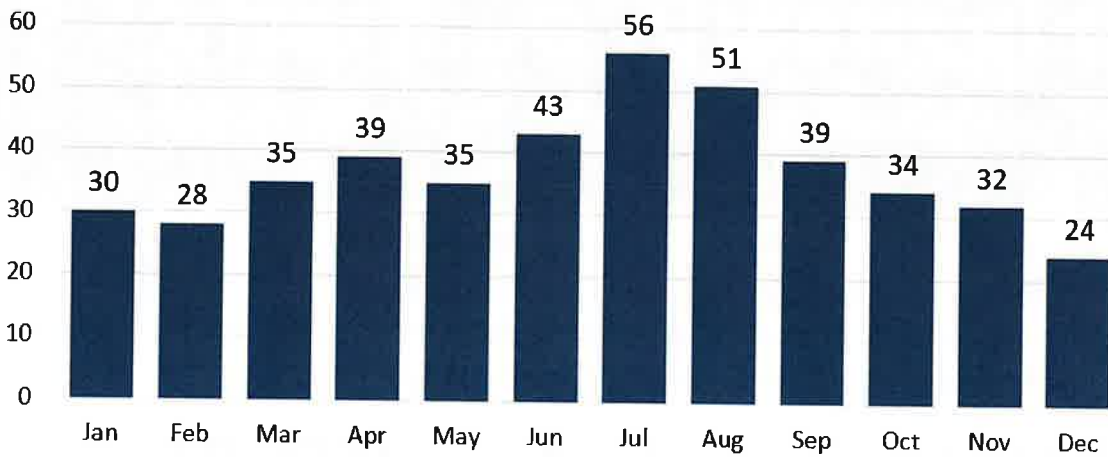
The age distribution of cases in Central Oregon over the past 20 years is similar to the distribution seen across Oregon as a whole.



*2020 data is year-to-date as of September 30, 2020

Salmonellosis in Central Oregon by Month

Central Oregon Salmonella Cases by Month, 2000-2020*



The late summer months have the most salmonellosis cases to occur in Central Oregon.

Over the past twenty years, nearly 24% of cases occurred between July and August.

*As of September 30, 2020

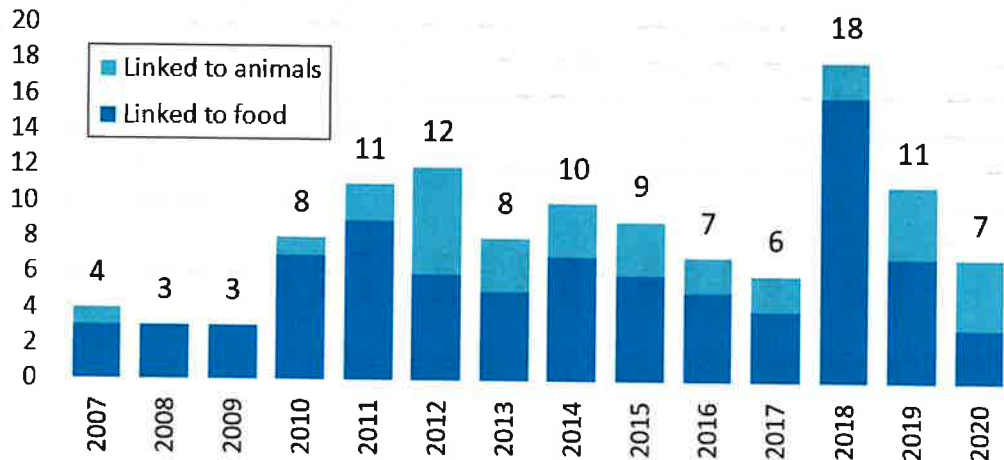
Salmonellosis Outbreaks in the United States

Since 2007, 72% of all salmonellosis outbreaks nationwide are linked to a food source.

According to the CDC, the estimated number of illnesses is more than 1.2 million, 23 thousand hospitalizations, and 450 deaths.

Salmonella has multiple serotypes that make each outbreak unique in its characteristics and sources that help public health scientists track the disease.

United States salmonella outbreaks, 2007-2020



Salmonellosis Outbreak Spotlight: *Salmonella* Newport

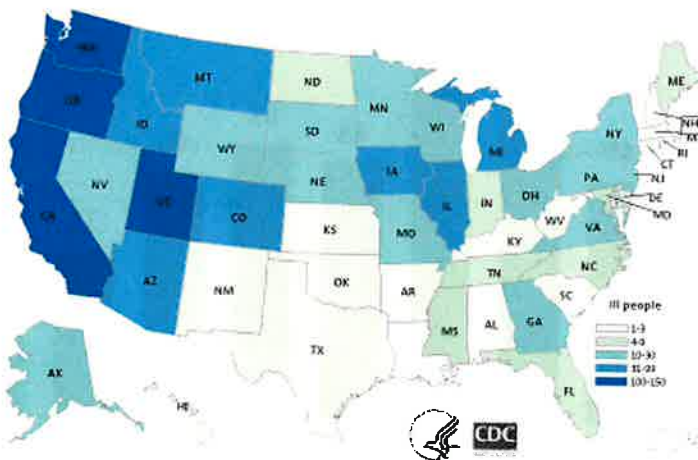


Figure source: <https://www.cdc.gov/salmonella/newport-07-20/map.html>

From June to September 2020, a total of 1,127 people across 48 states were reported infected with *salmonella* bacteria, resulting in 67 hospitalizations and zero deaths.

According to the CDC, outbreak investigation showed that red onions from Thomson International Inc. were the likely source, though other onion types were also likely contaminated due to coinciding growth and harvest.

National and international recalls were issued for red, white, yellow, and sweet yellow onions across multiple distributors and retailers selling products containing onions.

As of October 6th, Oregon reported 109 salmonellosis cases linked to this outbreak.

Central Oregon Public Health Quarterly

Communicable Disease Update for Crook, Deschutes, and Jefferson Counties
Fourth Quarter Report, 2020

24/7 Communicable Disease reporting lines:

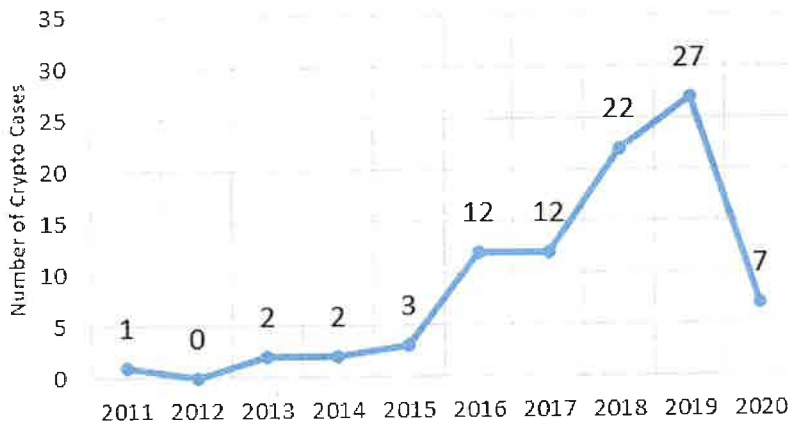
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Cryptosporidiosis in Central Oregon

Annual Number of Cryptosporidiosis Cases in Central Oregon



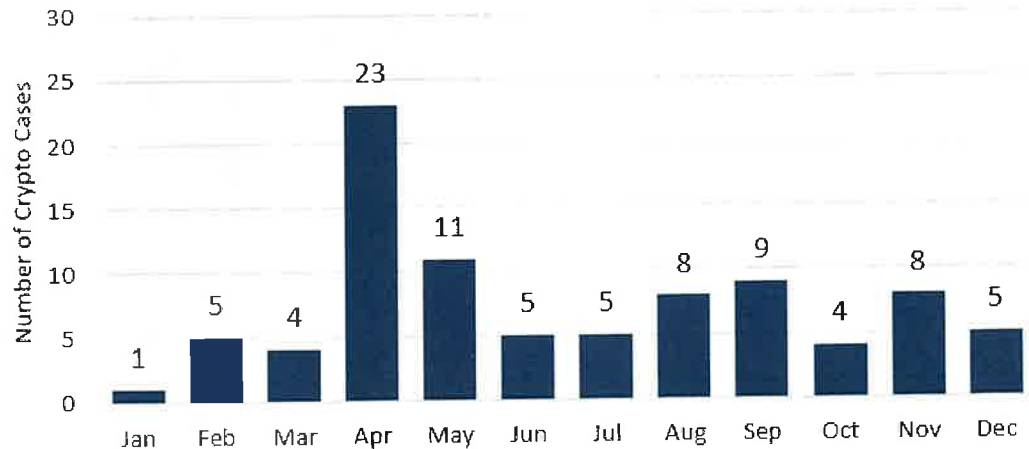
The number of cryptosporidiosis (also known as "crypto") cases in Central Oregon has been trending upward over the past ten years.

There were 88 cases of cryptosporidiosis in Central Oregon between 2011 and 2020. The number of cases each year has ranged from a low of 0 cases in 2012 to a peak of 27 cases in 2019. 2020 saw the fewest cases in Central Oregon since before 2016.

Most (63.6%) cases of crypto in Central Oregon between 2010-2019 were Deschutes County residents, followed by Crook County (26.1%) and Jefferson County (10.2%).

Cryptosporidiosis in Central Oregon by Month

Central Oregon Cryptosporidiosis Cases by Month, 2011-2020

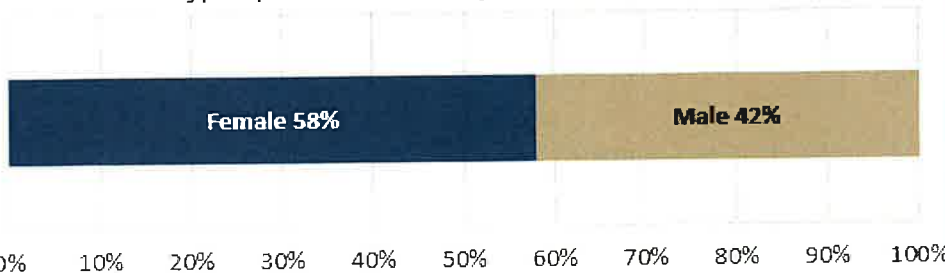


Most known cryptosporidiosis cases in Central Oregon occur in the month of April.

Over the past ten years, over 26% of cases occurred in April. Almost half of the cases in April occurred in Crook County.

Cryptosporidiosis Cases by Sex

Percent of Cryptosporidiosis Cases by Sex, 2011-2020, Central Oregon



Most cryptosporidiosis cases in Central Oregon over the past ten years were female.

Around 42.0% of Central Oregon cases between 2011-2020 were male. Central Oregon has nearly the same percentage of cases that were female compared to Oregon (56.4%) during the same time frame.

Cryptosporidiosis Cases by Age Group

The age group with the highest proportion of cryptosporidium cases in Central Oregon between 2011-2020 were aged 20-29 (21.6%), compared to Oregon (16.1%). Statewide, the age groups with the highest proportion were people aged 30-39 (18.6%).

Number of Central Oregon Cryptosporidiosis Cases by Age Group, 2011-2020



Cryptosporidiosis in the United States

U.S. Cryptosporidiosis Outbreaks: 2009–2017

Outbreaks of diarrhea most commonly linked to

Pools* (35%)



Don't swim with diarrhea

Cattle (15%)



Wash hands after touching animals

Childcare (13%)



Keep kids sick with diarrhea home

*Pools and water playgrounds
As reported in Gharpure et al. *MMWR* 2019 (bit.ly/MMWR627)

CDC MMWR

Cryptosporidiosis is a water-borne diarrheal illness caused by a protozoa parasite called *Cryptosporidium* that can spread person-to-person and from animals to humans.

It is the leading cause of waterborne disease outbreaks among humans in the United States. Pools and water playgrounds are most commonly linked to cryptosporidiosis outbreaks.

Incidence of Cryptosporidiosis Cases, United States, 2019

Cryptosporidium is widespread across the United States. While incidence is highest in Midwestern states, risk factors can differ between geographical regions.

In 2019, Oregon had 254 cases of cryptosporidiosis with an incidence rate of 6 per 100,000 population. There were 6 outbreaks of cryptosporidiosis in 2019.

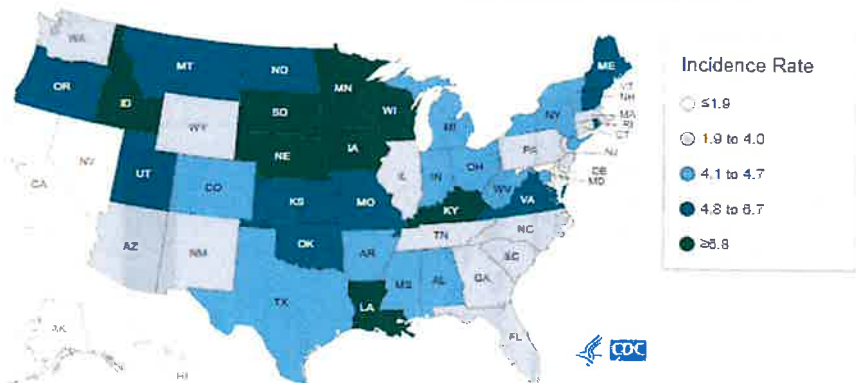


Figure source: <https://www.cdc.gov/healthywater/surveillance/cryptosporidium/cryptosporidium-2019.html>

What providers need to know about cryptosporidiosis screening

Since the late 1990s, cryptosporidiosis in humans was thought to be caused by only one species; *Cryptosporidium parvum*. We now know that there are at least 30 species, many with multiple subtypes of varying severity. **All forms are indistinguishable by traditional clinical laboratory tests.** Only molecular testing methods can distinguish between species, genotypes, and subtypes.

According to the CDC, people who are most likely to become infected with *Cryptosporidium* include:

- Children who attend childcare centers, including diaper-aged children, and childcare workers
- Parents of infected children
- Older adults (ages 75 years and older)
- Caretakers of people with Crypto
- People who travel internationally
- Backpackers, hikers, and campers who drink unfiltered, untreated water
- People who drink from untreated, unprotected shallow wells
- People, including swimmers, who swallow water from contaminated sources
- People who handle infected calves or other ruminants like sheep
- People exposed to human feces through sexual contact