Communicable Disease Data Report
2010-2014

For Healthcare Providers

Tacoma - Pierce County Health Department
Healthy People in Healthy Communities

Main Phone
(253) 798-6410

24-Hour Disease Reporting Line
(253) 798-6534

Confidential FAX
(253) 798-7666

Table of Contents

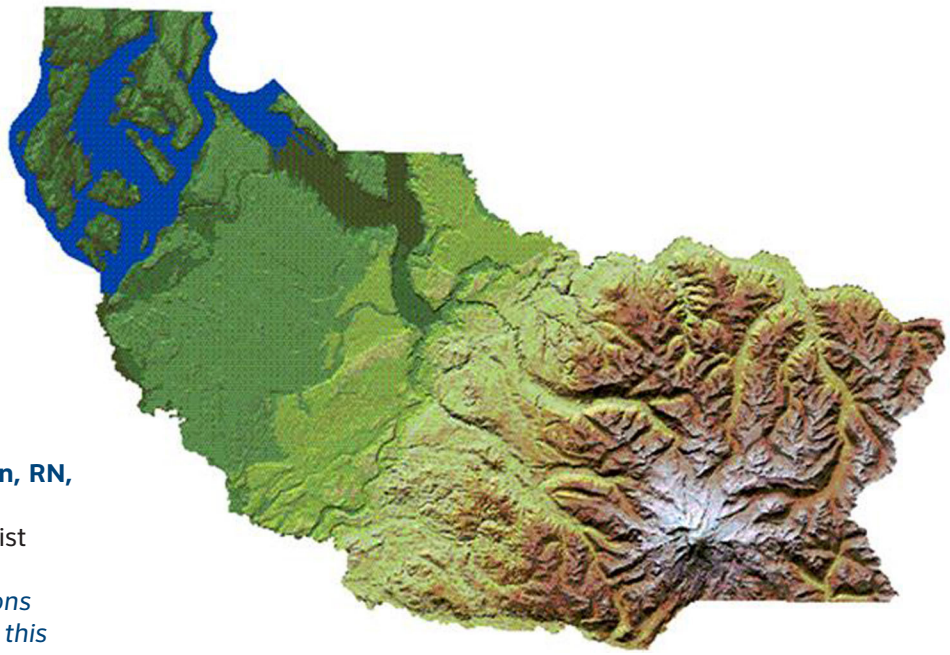
Introduction

Pierce County healthcare providers and laboratories help control communicable diseases by reporting notifiable conditions to Tacoma-Pierce County Health Department.

The Health Department investigates reports of notifiable conditions to detect outbreaks and prevent the spread of communicable diseases. Data are analyzed to determine disease rates, trends and geographical clustering; data are used to develop disease prevention programs and policies, and refine outbreak investigation.

The Health Department is committed to ensuring that healthcare providers and laboratories have access to countywide disease data summaries to inform their practice.

The total number of cases and incidence per 100,000 of the population for these diseases are included in this summary. Incidence is not calculated if fewer than five cases have been reported.



Pierce County, Washington

Contributors

Denise Stinson, MN, RN
CD/Epi Program Mgr

Jessica Gehle, MPH
STD/HIV, Program Mgr

Randall Knowlery
Office Administrator

Nigel Turner, MPH, RS
Division Director

Matthew Rollosson, RN, MPH&TM
Nurse Epidemiologist

If you have questions or feedback about this publication, contact Denise Stinson at (253) 798-7671 or email DStinson@tpchd.org.

Enteric Diseases

Enteric pathogens can be spread through contaminated food or water, or through contact with infected feces. We monitor these infections to detect outbreaks and prevent transmission in households and in the community.

In Pierce County, campylobacteriosis is the most frequently reported enteric illness caused by a bacterial pathogen. Risk factors include consumption of poultry, raw milk, untreated water, and contact with animals. Much of the increase in campylobacteriosis in Pierce County (from a rate of 16.5/100,000 in 2011 to a rate of 26.4/100,000 in 2014) is thought to be due to a transition from culture to the use of *Campylobacter* antigen tests by local hospital laboratories. *Campylobacter* is a difficult organism to isolate using culture, and the antigen tests are much more sensitive, identifying many more positives. However, false positives with antigen tests are not uncommon. In late 2015, Pierce County hospital laboratories are in the process of transitioning to molecular methods to detect pathogens in stool, which should improve the reliability of test results.

Infections with *Salmonella sp.* are usually due to consumption of contaminated food or contact with animals. Live chickens and reptiles are the most commonly identified animal exposures. Person-to-person transmission can occur. Rates in Pierce County are slightly lower that Washington state.

Most infections due to *Campylobacter* and *Salmonella* are self-limiting and antibiotic treatment is usually not necessary. Antimicrobial therapy is warranted only for patients with severe disease or those at high risk for severe disease, such as infants or people with other serious health problems. Unnecessary antibiotic use can lead to the development of resistance, can expose the patient to unnecessary side effects and can lead to the development of potentially deadly enteritis due to *Clostridium difficile* infection. A review of campylobacteriosis and salmonellosis cases in Pierce County from 2010-2014 showed that of cases reviewed, 44% of campylobacteriosis and 66% of salmonellosis cases received prescriptions for antibiotics.

Shiga toxin-producing *E. coli* (STEC) should be suspected in patients with bloody diarrhea. Testing for shiga toxin will identify infections caused by non-O157 *E. coli.* Illnesses caused by non-O157 STEC in the United States tend to be less severe than those caused by *E. coli* O157:H7. In 2014, 36% of STEC infections were caused by *E. coli* O157:H7 in Washington State. Antibiotics should not be given for known or suspected STEC infection as they may increase the risk of developing hemolytic uremic syndrome and subsequent kidney damage.

graph available on page 8

Enteric Diseases		2010		2011		2012		2013		2014	
		Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000
Campylobacter	Pierce County	103	13.0	132	16.5	221	27.3	253	31.3	217	26.4
	Washington	1,315	19.6	1,538	22.7	1,551	22.7	1,631	23.7	1,591	22.8
Cryptosporidia	Pierce County	32	4.0	39	4.9	22	2.7	24	2.9	18	2.2
	Washington	102	1.5	88	1.3	101	1.5	84	1.2	75	1.1
Giardia	Pierce County	37	4.7	42	5.2	48	5.9	46	5.7	41	5.0
	Washington	521	7.7	529	7.8	512	7.5	548	8.0	515	7.4
Salmonella (non-Typhoid)	Pierce County	71	8.9	53	6.6	75	9.3	74	9.2	76	9.3
	Washington	780	11.6	589	8.7	842	12.4	670	9.7	739	10.6
Shiga toxin-producing *E. coli*	Pierce County	11	1.4	22	2.7	11	1.4	14	1.7	16	1.9
	Washington	226	3.4	203	3.0	239	3.5	330	4.8	299	4.3
Shigella	Pierce County	7	0.9	2	nc	5	0.6	4	nc	6	0.7
	Washington	112	1.7	104	1.5	133	2.0	122	1.8	157	2.3
Vibriosis[1]	Pierce County	5	0.6	3	nc	4	nc	11	1.4	10	1.2
	Washington	59	0.9	45	0.7	67	1.0	90	1.3	92	1.3

Source: Washington State Communicable Disease Report 2014
nc = not calculated
[1]Source: Public Health Issue Management System (PHIMS)

Vaccine Preventable Diseases

Pertussis—Pertussis epidemics historically have occurred at 3–5 year intervals. In 2012, epidemic levels were present in many states, including Washington State. During 2014, incidence in Pierce County and Washington fell to the lowest levels since 2010. Incidence in Pierce County is higher than in Washington state (10.5 vs. 8.6).

Infants under age 3 months are most at risk for severe pertussis, so protecting them is a public health priority. Tdap vaccination, regardless of the timing of previous Tdap doses, is now recommended during every pregnancy between 27 and 36 weeks gestation. Passive antibody from mother to fetus may protect young infants in the first weeks of life.

Invasive Meningococcal Disease—There were four cases reported in Pierce County in 2014. Of the four cases in Pierce County, one case was serogroup C and three cases were serogroup B. Routine immunization with meningococcal conjugate vaccine is given at age 11–12 with a second dose at or after age 16, and protects against types A, C, Y and W-135. Vaccine against serogroup B is available and can be given to anyone 16 through 23 years old to provide short term protection against most strains of serogroup B meningococcal disease, although there is no CDC recommendation for routine immunization for healthy adolescents.

Invasive meningococcal disease is immediately notifiable. Household and child care contacts will need prophylaxis, coordinated by the Health Department. Healthcare personnel usually do not need prophylaxis unless there is direct contact with secretions during mouth to mouth resuscitation or splatter to an unprotected face during intubation or suctioning.

Measles—There were 3 cases of measles in Pierce County in spring of 2014 during a regional outbreak that originated from travel to the Federated States of Micronesia. The Pierce County cases stemmed from transmission within a health care facility when a young child with measles visited a local emergency department where a susceptible infant was exposed. Transmission subsequently occurred within the infant's household and to a health care worker. Both the household member and the health care worker were completely vaccinated, and experienced modified measles disease.

It is recommended that infants age 6–12 months who travel with their families outside the United States receive a dose of MMR vaccine which is not counted as a valid lifetime dose, but can protect them during travel.

Rubella—There have been 5 cases in Washington State since 2004, none in Pierce County.

Mumps—In the U.S., 2014 was an active year for mumps with 1,223 cases and highly publicized outbreaks on college campuses and among players of the National Hockey League. However, there were no confirmed cases in Pierce County in 2014. Many different viruses can cause acute parotitis; a buccal swab for viral culture is recommended to confirm mumps and can be done at the Washington State Public Health Laboratory (WSPHL). Vaccine effectiveness has been estimated at a median of 78% (range: 49%–91%) for one dose, and a median of 88% (range: 66%–95%) for two doses.

Vaccine Preventable Diseases		2010		2011		2012		2013		2014	
		Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000
Haemophilus influenzae	Pierce County[1]	0	nc	1	nc	0	nc	2	nc	0	nc
	Washington[2]	10	2.3	8	1.8	4	nc	11	2.4	9	2.0
Measles	Pierce County	0	nc	0	nc	0	nc	0	nc	3	0.4
	Washington	1	nc	4	0.1	0	nc	4	0.1	33	0.5
Meningococcal	Pierce County	3	nc	1	nc	3	nc	1	nc	4	nc
	Washington	33	0.5	22	0.3	24	0.4	20	0.3	17	0.2
Mumps	Pierce County[1]	3	nc	0	nc	0	nc	2	nc	1	nc
	Washington	7	0.1	2	nc	2	nc	2	nc	9	0.1
Pertussis	Pierce County	84	10.6	129	16.1	783	96.9	116	14.2	86	10.5
	Washington	607	9.0	962	14.2	4,916	72.1	748	10.9	601	8.6

Source: Washington State Communicable Disease Report 2014
nc = not calculated

[1]Source: Public Health Issue Management System (PHIMS)
[2]Population adjusted for age 0 to 4 years (Source: OFM)

Hepatitis

Hepatitis A—Annual case counts in Pierce County have fallen to single digits for the past several years, following implementation of routine hepatitis A vaccination for children. Most cases are related to travel outside the U.S. Four cases were reported in 2014, all related to an outbreak within family and social contacts of an infant adopted from Ethiopia. Infants with acute hepatitis A are generally asymptomatic, but can infect caretaker adults who become very ill with vomiting, abdominal pain, fatigue and jaundice. It is recommended that families who are adopting children from countries where hepatitis A is a common childhood disease receive hepatitis A vaccine.

Acute Hepatitis B—In 2014, there were no reported cases in Pierce County and 44 reported in Washington state. Acute hepatitis B often goes undiagnosed because it is usually asymptomatic. Most acute cases in the U.S. are due to sexual transmission. Hepatitis B can also be transmitted by sharing injection equipment, needle sticks and from mother to infant during birth.

Acute Hepatitis C—Is usually asymptomatic and therefore difficult to detect. We investigated seven cases in 2013. Six of the cases reported using injection drugs.

Chronic Hepatitis B—Most people in Pierce County newly reported with chronic hepatitis B infection are immigrants from endemic countries who most likely acquired the disease from perinatal or early childhood exposure. The CDC recommends routine screening for positive hepatitis B surface antigen (HBsAg) for people from countries where the prevalence of HBsAg positive is 2% or greater, which includes most countries in Asia, Africa, the Middle East, the Pacific Islands, and Eastern Europe. Although HBsAg in pregnancy is reportable, Centers for Disease Control and Prevention (CDC) estimates that up to 50% of cases are not reported to the Health Department. When the report is received, our nurses case-manage infants of hepatitis B positive mothers to ensure post-exposure prophylaxis and serology at age 9-12 months to determine immune status of the child.

Chronic Hepatitis C—Is the leading cause of liver transplantation in the United States. It is transmitted through infected blood, most importantly through injection drug use. Transfusion of infected blood products was also a common exposure source prior to 1990. Most persons diagnosed with chronic hepatitis C are people born between 1945 and 1965. For this reason the CDC issued recommendations in 2012 that call for one-time screening for all persons in this age group. Positive antibody screening tests should be confirmed by hepatitis C RNA.

Identifying people infected with hepatitis C who were previously unaware is important so that they can seek care. New antiviral treatments have led to shorter duration of treatment and cure rates over 90%. Persons with chronic hepatitis C who are awaiting a decision for treatment should be counseled to avoid alcohol and many over the counter medications. Obesity is also a risk factor for disease progression.

Hepatitis		2010		2011		2012		2013		2014	
		Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000
Hepatitis A (enteric transmission)	Pierce County	2	nc	2	nc	1	nc	1	nc	4	nc
	Washington	21	0.3	31	0.5	29	0.4	45	0.7	26	0.4
Hepatitis B, Acute (vaccine preventable)	Pierce County	2	nc	1	nc	1	nc	3	nc	0	nc
	Washington	50	0.7	35	0.5	34	0.5	34	0.5	44	0.6
Hepatitis C, Acute	Pierce County	2	nc	1	nc	3	nc	7	0.9	16	1.9
	Washington	25	0.4	41	0.6	54	0.8	63	0.9	83	1.2
Hepatitis B, Chronic[1]	Pierce County	105	13.2	92	11.5	114	14.1	[1]0	[1]0.0	120	14.6
	Washington	1,229	18.3	1,018	15.0	1,139	16.7	874	12.7	1,149	16.5
Hepatitis C, Chronic[2]	Pierce County	584	73.4	436	54.4	400	49.5	297	36.5	478	58.2
	Washington	4,925	73.2	6,091	90.0	4,631	67.9	4,434	64.4	6,593	94.6

Source: Washington State Communicable Disease Report 2014
nc = not calculated
[1]2013 hepatitis B information was not available at time of publishing.
[2]Source: Washington State Department of Health, Office of Infectious Disease and Reproductive Health

Sexually Transmitted Diseases

Chlamydia—Remains the most commonly reported condition in Pierce County, Washington State, and the United States. In 2014, healthcare providers in Pierce County reported 4,372 cases of chlamydia. Pierce County has the third highest rate of chlamydial infection in Washington State (532.3 per 100,000). A majority of these infections are among those aged 15 to 24 and most are asymptomatic. Screening sexually active young people aged 15 to 24 is a critical cornerstone of chlamydia prevention. The Health Department recommends annual screening for all sexually active patients under age 25 and expedited partner treatment (EPT) for all exposed partners of heterosexual chlamydia cases.

Gonorrhea—In 2014, Washington State and Pierce County continued to see an increase of reported gonorrhea. It is estimated that in 2015 there will be a slight increase in number of gonorrhea cases reported. Healthcare providers in Pierce County reported 1,271 cases of gonorrhea in 2014, up from 966 the previous year (rate of 118.6 per 100,000). According to Washington State Department of Health's (DOH) estimates, approximately 10% of those reported with gonorrhea are infected with HIV. Because of this, the Health Department recommends HIV screening for any patient with gonorrhea. The recommended treatment for uncomplicated gonococcal infections of the cervix, urethra, rectum and pharynx is the combination therapy of both ceftriaxone (250 mg IM in a single dose) plus azithromycin (1 g orally in a single dose). Someone presumptively diagnosed with gonorrhea should be treated at the time of their initial evaluation, before test results become available. Men who have sex with men (MSM) should be offered multisite screening (urine, pharyngeal, rectal) for chlamydia and gonorrhea.

Syphilis (Primary and Secondary)—In 2014, primary and secondary syphilis cases in Pierce County remained stable. Preliminary 2015 data show an increase in primary and secondary syphilis cases. Many of the early syphilis cases have been diagnosed in MSM who are also infected with HIV. Because of this, the Health Department recommends that providers conduct syphilis testing for all MSM patients, especially those who are already infected with HIV. When someone is infected with HIV, syphilis can invade the central nervous system at any stage.

HIV/AIDS—In Pierce County, most of those infected with HIV are white men who have sex with men; however, there are heterosexual men and women also infected with HIV. Rates of HIV infection are higher among African American and Latinos than Whites. Because an estimated 25% of those infected with HIV are unaware of their infection, CDC recommends that healthcare providers conduct routine HIV screening for all patients at least once and annually for all patients who are known to be at risk (especially MSM). CDC, DOH, and the Health Department recommend HIV Pre-Exposure Prophylaxis (PrEP) for those patients at highest risk:

- MSM or transgender persons who have sex with men if the patient has any of the following risks in the prior 12 months:
  - Diagnosis of rectal gonorrhea or early syphilis.
  - Methamphetamine or popper use.
  - History of providing sex for money or drugs.
- Persons in ongoing sexual relationships with an HIV-infected person who is not on antiretroviral therapy (ART) OR is on ART but is not virologically suppressed OR who is within 6 months of initiating ART.

graph available on page 8

Sexually Transmitted Diseases		2010		2011		2012		2013		2014	
		Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000
Chlamydia	Pierce County	3,815	479.7	4,159	518.5	4,293	531.2	4,298	527.7	4,372	532.3
	Washington	21,401	318.3	23,237	343.3	24,600	360.8	25,013	363.4	26,246	376.7
Gonorrhea	Pierce County	414	52.1	424	52.9	657	81.3	966	118.6	1,271	154.8
	Washington	2,865	42.6	2,730	40.3	3,282	48.1	4,390	63.8	6,136	88.1
Herpes (genital, initial infection)	Pierce County	248	31.2	327	40.8	346	42.8	364	44.7	400	48.7
	Washington	2,028	30.2	2,149	31.8	2,197	32.2	2,207	32.1	2,082	29.9
Syphilis (primary and secondary)	Pierce County	9	1.1	27	3.4	22	2.7	28	3.4	30	3.7
	Washington	261	3.9	329	4.9	300	4.4	285	4.1	337	4.8
HIV Infection (new diagnosis)	Pierce County	61	7.7	56	7.0	53	6.6	59	7.2	44	5.4
	Washington	556	8.3	496	7.3	517	7.6	470	6.8	446	6.4

Source: Washington State Communicable Disease Report 2014

Tuberculosis

The incidence of tuberculosis in Pierce County continues to trend downward and remains below that of Washington State and the United States.

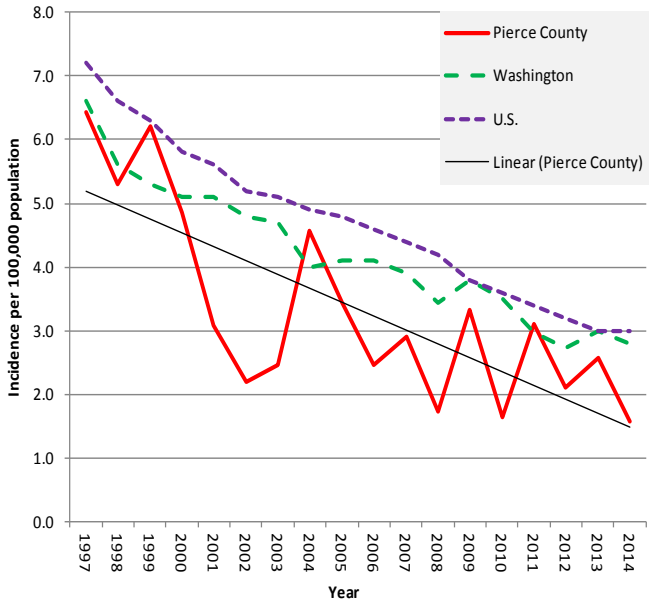
There were 13 confirmed cases of tuberculosis in Pierce County in 2014. Of those, 9 (69%) were persons born outside of the United States. Eight (62%) Pierce County tuberculosis cases were Asian.

Out of 11 isolates tested for drug resistance, nine were sensitive to all first-line drugs. One isolate was mono-resistant to isoniazid and one was resistant to isoniazid, pyrazinamide, and streptomycin.

Of the 11 cases with pulmonary tuberculosis, 6 had radiographic evidence of cavitary lesions, a marker for advanced disease. All of the patients who were alive at diagnosis (12) were HIV seronegative.

Ten patients successfully completed antitubercular therapy, one died during therapy, one was diagnosed postmortem, and one was treated in a correctional facility.

Tuberculosis Incidence, 1997-2014



Tuberculosis		2010		2011		2012		2013		2014	
		Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000	Cases	Rate per 100,000
Tuberculosis	Pierce County	15	1.9	25	3.1	19	2.4	22	2.7	13	1.6
	Washington	234	3.5	199	2.9	185	2.7	210	3.1	196	2.8

Source: Washington State Communicable Disease Report 2014

Rabies Post-Exposure Prophylaxis

Animal bites considered low-risk for rabies exposure are no longer reportable (WAC revision 2011). In Washington State, rabies is rarely identified in any animal except bats. Since 1987, only four rabid domestic, terrestrial animals were identified, two with bat variant virus. Of bats tested in Washington, 5 to 10% are identified as rabid, although this is not representative of the population of bats as a whole. We estimate that in the wild less than 1% of bats are rabid.

Rabies post-exposure prophylaxis (PEP) involves immune globulin and a series of vaccinations administered over weeks. It is very expensive and time-consuming for the patient, and should be undertaken only after careful evaluation of the exposure. PEP is recommended for bat bites where the bat was not captured and tested for rabies. Since bat bites can be unapparent, PEP should be administered if a bat is found with a small child or was in a room with a person who was asleep. Exposures from wild animals should be evaluated and PEP can be recommended on a case-by-case basis. Rabies is still fairly common in some developing countries, and PEP is usually recommended for animal bites that occur during travel outside the United States.

Health Department staff are available to assist with evaluation of exposures 24/7, and can be reached at (253) 798-6410.

Other Reportable Diseases

Transfusion-acquired Babesiosis—In March 2014, we were notified of a case of transfusion-acquired babesiosis. The patient was a 69-year-old male who, during a hospitalization in 2013, received 36 units red blood cells and 5 units of platelets. In February, he was admitted to hospital with hemolytic anemia, fatigue, and altered mental status. A thick and thin blood smear revealed *Babesia* trophozoites. Serum from the patient was sent to CDC and the species was identified as *B. microti*.

We obtained a list of the transfused blood products and donor numbers for each of those products. The blood bank that released the products recalled the donors for testing. One of the donors was a Minnesota resident and there was a delay in testing that donor. Another patient had received blood from the Minnesota donor. Because *B. microti* is endemic in Minnesota, the other recipient was empirically treated for babesiosis. We later learned that the Minnesota donor was negative. Thirty-one of the 41 local donors were tested. One donor, a King County resident, had positive serology for *B. microti*. That donor had travelled to Connecticut. No other blood products from that donor had been transfused to other patients.

B. microti is endemic in the Eastern and Midwestern United States. In Washington State, cases of babesiosis due to *B. microti* have been associated with travel to endemic states. Two other species, *B. duncani* (formerly WA1) and *B. divergens*-like organisms have been identified in babesiosis cases not associated with travel outside Washington State. *Babesia* species have not been identified in ticks in Washington State.

Botulism—Two cases of infant botulism were reported to TPCHD in 2014, and were reported within a few days of each other. This was unusual as infant botulism is rarely reported; from 2009 through 2014 there was only one other case in Pierce County. The infants, a 5-week-old and a 6-month-old were both hospitalized and had positive stool for botulism toxin type A. Despite the association in time, there were no commonalities identified between the infants. The 6-month-old had a 5-day history of constipation prior to the onset of weakness. Neither child required intubation or mechanical ventilation. Both babies were treated with botulism antitoxin, improved, and were discharged to home with nasogastric feedings. Feeding tubes were removed within a few weeks of discharge when they were taking adequate oral feeding. The 6-month-old had residual constipation one year later.

Clostridium botulinum spores are commonly found in soil. Infant botulism occurs when a child's gastrointestinal tract become colonized with *C. botulinum*. This rarely occurs once the GI tract is colonized with normal flora. Although historically associated with honey consumption, this is rarely reported. Infant botulism occurs in both breast and bottle-fed children.

continued on page 8

		2010	2011	2012	2013	2014	2010–2014 Cases
Coccidioidomycosis	Pierce County	0	3	3	4	3	13
	Washington	10	10	8	10	14	59
Legionellosis	Pierce County	1	4	3	2	3	13
	Washington	35	43	30	52	63	223
Listeriosis	Pierce County	4	0	1	3	4	12
	Washington	24	19	26	21	24	114
Lyme Disease	Pierce County	1	2	1	2	0	6
	Washington	16	19	15	19	15	84
Malaria	Pierce County	3	1	3	3	4	14
	Washington	39	24	26	30	41	160
Typhoid Fever	Pierce County	1	0	0	0	1	2
	Washington	22	9	11	11	15	68
Wound Botulism	Pierce County	1	0	0	2	0	3
	Washington	1	4	2	4	0	11

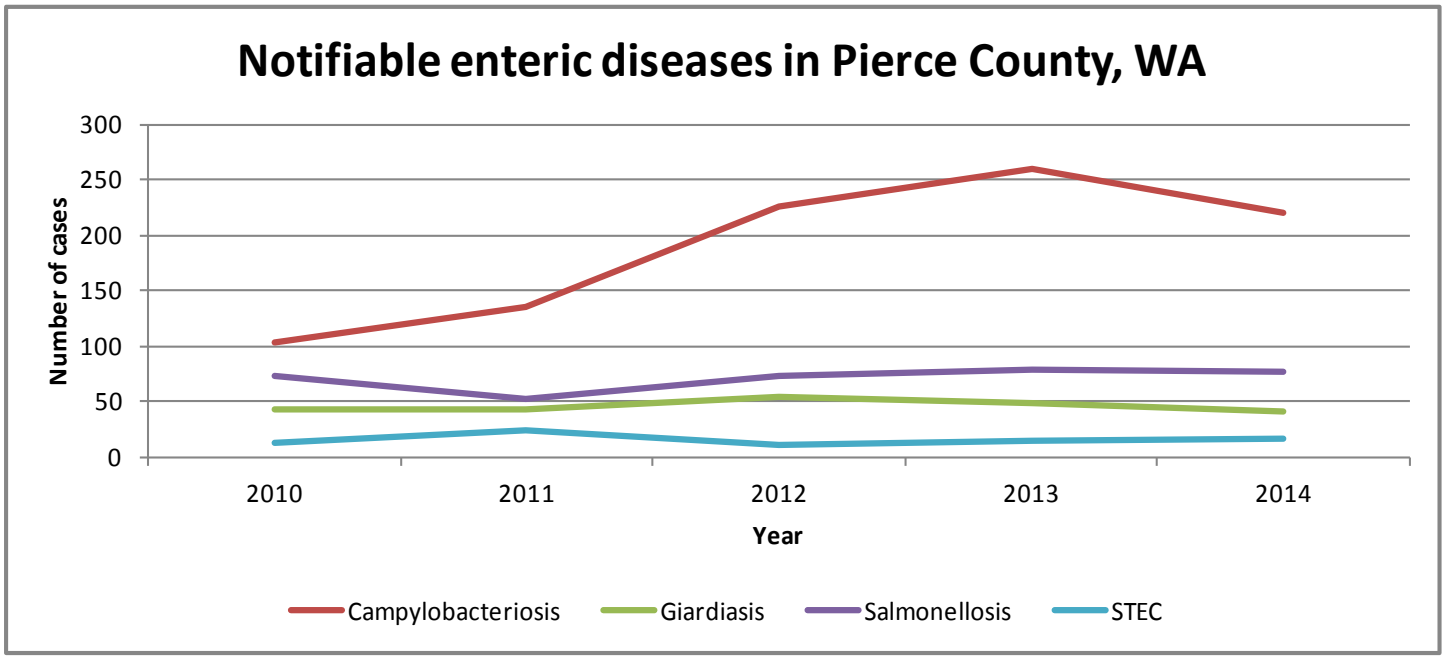
Source: Washington State Department of Health

Other Reportable Diseases (continued from page 7)

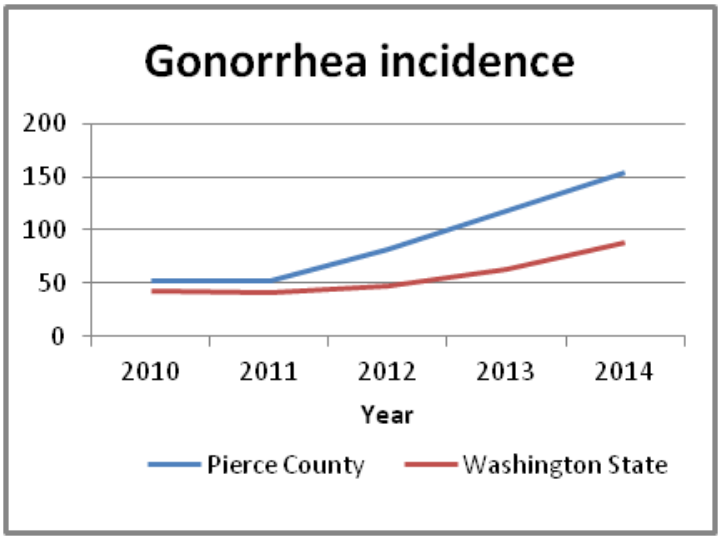
State law requires health care providers and laboratory personnel to immediately report all suspected cases of botulism to the local health jurisdiction of the county in which the patient resides. Treatment must not be delayed while awaiting laboratory confirmation, which may take several days. Botulism testing and immune globulin treatment are only available through public health. Call (253) 798-6410 immediately 24/7 to report a suspect case.

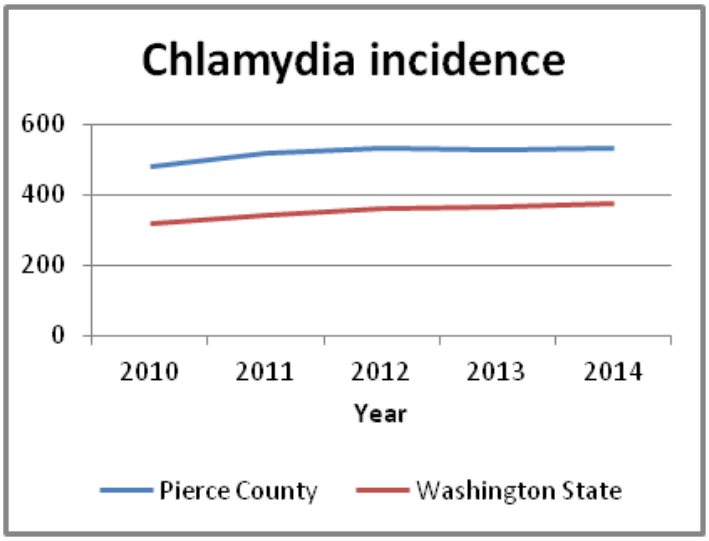
There were no cases of foodborne or wound botulism reported to TPCHD in 2014.

Enteric Diseases in Pierce County 2010 - 2014



Sexually Transmitted Diseases in Pierce County 2010 - 2014*





*Incidence per 100,000 population