

Communicable Disease Data Report 2012-2016

For Healthcare Providers



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Introduction

Pierce County health care providers and laboratories help control communicable diseases by reporting notifiable conditions and clusters of disease to Tacoma-Pierce County Health Department. Clinician and laboratory reporting is essential for early public health follow up, disease control interventions and rapid detection of outbreaks.

Data are analyzed to determine disease rates, trends and geographic clustering; data are used to develop disease prevention programs and policies, and refine outbreak investigation.

The Health Department is committed to ensuring that health care 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. Data for 2016 are preliminary, and some Washington state data is not available for 2016.

Table of Contents

Enteric Disease.....	2
Vaccine Preventable.....	3
Diseases	
Hepatitis.....	4
Sexually Transmitted.....	5
Diseases	
Tuberculosis.....	6
Rabies Post-Exposure.....	6
Prophylaxis	
Other Reportable Diseases.....	7
<i>Salmonella Infection.....</i>	<i>8</i>
<i>in Neonate</i>	

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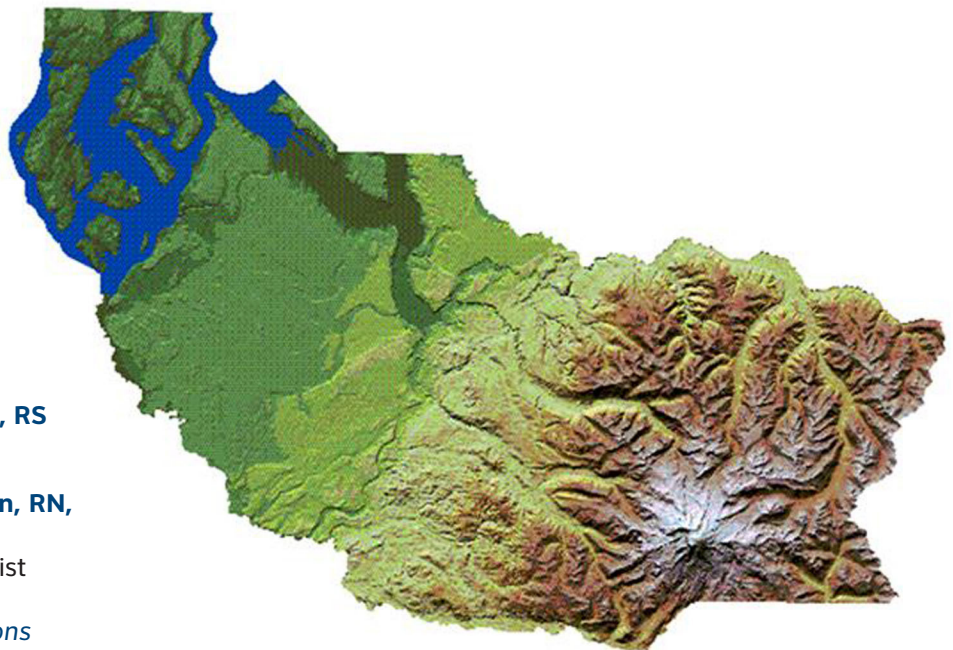
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Enteric Diseases

Enteric pathogens can be spread through contaminated food or water, animal contact, 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 30.1/100,000 in 2015) 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 2016, Pierce County hospital laboratories are transitioning to more reliable molecular methods to detect pathogens in stool.

Infections with *Salmonella sp.* are usually due to consumption of contaminated food or contact with animals. In 2015, an outbreak of *Salmonella* 1,4,5,12:i:- associated with whole roaster pigs consumed at parties and restaurants sickened 184 people in Washington, 20 in Pierce County. Generally, the most common sources for *Salmonella* infection associated with live animal contact are chickens and reptiles. In 2016, 2 Pierce County

cases also reported contact with exotic pets, including a hedgehog and a sugar glider. Parents of infants and small children should be warned that reptiles and many varieties of exotic pets carry *Salmonella*.

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 issues. 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*, which in the U.S. tend to be less severe than those caused by *E. coli* O157:H7. In 2015, 39% 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. Identification of STEC infections are increasing, likely due to the higher sensitivity of molecular methods now used in many labs.

Graph available on Page 8.

Enteric Diseases		2012		2013		2014		2015		2016 Preliminary	
		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
<i>Campylobacter</i>	Pierce County	221	27.3	253	31.3	217	26.4	250	30.1	236	27.9
	Washington	1,551	22.7	1,631	23.7	1,591	22.8	1,847	26.2	*	
<i>Cryptosporidia</i>	Pierce County	22	2.7	24	2.9	18	2.2	24	2.9	14	1.7
	Washington	101	1.5	84	1.2	75	1.1	113	1.6	*	
<i>Giardia</i>	Pierce County	48	5.9	46	5.7	41	5.0	42	5.1	44	5.2
	Washington	512	7.5	548	8.0	515	7.4	604	8.6	*	
<i>Salmonella</i> (non-Typhoid)	Pierce County	75	9.3	75	9.3	74	9.2	95	11.4	104	12.3
	Washington	842	12.4	671	9.7	741	10.6	1,034	14.6	*	
Shiga toxin-producing <i>E. coli</i>	Pierce County	11	1.4	14	1.7	16	1.9	26	3.1	30	3.6
	Washington	239	3.5	330	4.8	299	4.3	419	5.9	*	
<i>Shigella</i>	Pierce County	5	0.6	5	nc	4	nc	14	1.7	17	2.0
	Washington	133	2.0	122	1.8	157	2.3	152	2.2	*	
Vibriosis	Pierce County	4	nc	11	1.4	10	1.2	10	1.2	2	nc
	Washington	67	1.0	90	1.3	92	1.3	68	1.0	*	

Source: Washington State Communicable Disease Report 2015 *2016 Washington State data not yet published
nc = not calculated

Vaccine Preventable Diseases

Pertussis—Pertussis epidemics historically have occurred at 3–5 year intervals. In 2012, epidemic levels were present in many states in the United States, including Washington State. In Pierce County we experienced a mild upswing to 157 cases in 2015, followed by a decrease to 89 cases in 2016.

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

Invasive Meningococcal Disease—There were eight cases reported in Pierce County in 2016. Five cases were serogroup C, and there were one each of serogroups B, Y and X. Serogroup X is usually not seen in the U.S. 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 no cases of measles in Pierce County during 2015 and 2016. The U.S. is considered free of measles, and all cases that occur result from importation. Measles outbreaks occur globally with frequency in other areas of the world, including Europe. 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—Over 5,000 cases of mumps were reported in the U.S. during 2016. Washington State is currently experiencing an outbreak of mumps with over 700 cases reported from fall of 2016 through March 2017. Most outbreaks of mumps are associated with crowded environments such as schools and college dorms. Many different viruses can cause acute parotitis; a buccal swab for PCR 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		2012		2013		2014		2015		2016 Preliminary	
		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	0	nc	2	nc	0	nc	0	nc	1	nc
	Washington ¹	4	nc	11	2.4	9	2.0	5	1.1	*	
Measles	Pierce County	0	nc	0	nc	3	0.4	0	nc	0	nc
	Washington	0	nc	4	0.1	33	0.5	10	0.1	*	
Meningococcal	Pierce County	3	nc	1	nc	4	nc	1	nc	8	0.9
	Washington	24	0.4	20	0.3	17	0.2	10	0.1	*	
Mumps	Pierce County	0	nc	2	nc	1	nc	0	nc	14	1.7
	Washington	2	nc	2	nc	9	0.1	7	0.1	*	
Pertussis	Pierce County	783	96.9	116	14.2	86	10.5	157	18.9	89	10.5
	Washington	4,916	72.1	748	10.9	600	8.6	1,383	19.6	*	

Source: Washington State Communicable Disease Report 2015

nc = not calculated

*2016 Washington State data not yet published

¹Population 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 to developing countries.

Acute Hepatitis B—In 2016, there were 6 reported cases in Pierce County. 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 30 cases in 2016, which increased from 22 cases in 2015. Most of the cases were in people under age 35 who are using injection drugs. Incidence of acute hepatitis C in young people has increased significantly across the U.S. since mid 2000s, due to increased injection drug use of heroin and abuse of prescription opioids.

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 HBsAg for people from countries where the prevalence of HBsAg positive is 2% or greater, which includes most

counties in Asia, Africa, the Middle East, the Pacific Islands, and Eastern Europe. Although positive hepatitis B surface antigen (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—Nationally, hepatitis C- related deaths have surpassed deaths from all other reportable infectious diseases combined. It 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 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 upwards of 90%. Hepatitis C cure can lead to improved health and increased life-expectancy.

Hepatitis		2012		2013		2014		2015		2016 Preliminary	
		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	1	nc	1	nc	4	0.5	0	0.0	2	nc
	Washington	29	0.4	45	0.7	26	0.4	26	0.4	*	
Hepatitis B, Acute (vaccine preventable)	Pierce County	1	nc	3	nc	0	nc	5	0.6	6	0.7
	Washington	34	0.5	34	0.5	44	0.6	34	0.5	*	
Hepatitis C, Acute	Pierce County	3	nc	7	0.9	16	1.9	22	2.7	30	3.6
	Washington	54	0.8	63	0.9	83	1.2	63	0.9	*	
Hepatitis B, Chronic¹	Pierce County	113	14.0	173 ²		92	14.6	118	14.2	204 ²	nc
	Washington	1,140	16.7	877	12.7	1,118	16.0	1,309	18.5	*	
Hepatitis C, Chronic¹	Pierce County	396	49.5	288	35.4	386	47.0	910	109.6	1,350 ²	nc
	Washington	4,631	67.9	4,434	64.4	6,593	94.6	6,918	98.0	nc	nc

Source: Washington State Communicable Disease Report 2015

¹ Unduplicated Chronic hepatitis data source: Washington State Department of Health, Office of Infectious Disease and Reproductive Health, except where noted. Chronic hepatitis cases across Washington State are counted by the county of first report. Duplicate reports are merged at the State level.

² Cases reported to Tacoma-Pierce County Health Department prior to deduplication at WADOH

*2016 Washington State data not yet published

nc = rates for unduplicated cases not calculated as comparisons not valid

Sexually Transmitted Diseases

Chlamydia—Continues to be the most commonly reported notifiable condition in Pierce County and Washington State, and is increasing. There were 4,987 cases reported in 2016 which is a 7% increase over 2015. A majority of these infections are among people age 15 to 24 and most are asymptomatic. 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. Through the EPT program, free medication for your patient’s partner(s) is available from participating pharmacies. A prescription FAX form and list of participating pharmacies can be found at tpchd.org/STDFreeMeds.

Gonorrhea—After a four year trend of increasing cases of gonorrhea in Pierce County, there was a 12% decrease in 2016 from 2015. In Washington state overall there was a 13% increase in 2016. Patients infected with *N. gonorrhoeae* frequently are coinfecting with *C. trachomatis* and should be treated routinely to cover *C. trachomatis* infection. The recommended treatment for uncomplicated gonococcal infections of the genital tract, rectum and pharynx is the combination therapy of both ceftriaxone (250mg IM in a single dose) plus azithromycin (1g 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)—Infectious (primary and secondary) syphilis cases have doubled in

Pierce County from 2011-2016. Analogous increases are occurring statewide, particularly in larger urban areas (e.g., King, Spokane, and Snohomish Counties). In Washington state, 534 syphilis cases were reported during 2016, giving the highest rate since 1990. MSM account for 79% of primary and secondary syphilis cases during 2015 and 2016. During 2016, 36% of infectious cases reported in Pierce County have occurred in HIV-infected individuals.

Clusters of ocular syphilis have been reported in the U.S. in 2014 and 2015. In Pierce County, 6 cases had ocular manifestations. All patients diagnosed with syphilis that have ocular manifestations should immediately be treated for neurosyphilis and referred for ophthalmologic exam.

Two congenital syphilis cases were reported in Pierce County, one in late 2015 and one in 2016. Both of these cases involved missed opportunities for prenatal care providers to test and thereby make an earlier diagnosis. Pregnant women at high risk for syphilis should be tested in the third trimester and again at the time of delivery, in addition to routine prenatal screening.

HIV/AIDS—The preliminary number of new infections in Pierce County for 2016 is 47, which has declined from 2015. Nationally, new HIV infections have decreased 18% from 2008-2015. HIV transmission can be prevented through treating infected persons to suppress the viral load, and also offering pre-exposure prophylaxis (PrEP) to uninfected persons at high risk. It is estimated that in Washington State, 90% of HIV infected individuals have been diagnosed and are aware of their status, and 70% of persons with HIV have suppressed viral load.

Graphs available on Page 8.

Sexually Transmitted Diseases		2012		2013		2014		2015		2016	
		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	4,293	531.2	4,298	527.7	4,372	532.3	4,646	563.2	4,985	590.3
	Washington	24,600	360.8	25,013	363.4	26,246	376.7	28,721	410.0	31,111	433.1
Gonorrhea	Pierce County	657	81.3	966	118.6	1,271	154.8	1,363	165.2	1,198	141.9
	Washington	3,282	48.1	4,390	63.8	6,136	88.1	7,203	102.8	8,146	113.4
Herpes (genital, initial infection)	Pierce County	346	42.8	364	44.7	400	48.7	474	57.5	477	56.5
	Washington	2,197	32.2	2,207	32.1	2,082	29.9	2,524	36.0	2,581	35.9
Syphilis (primary and secondary)	Pierce County	22	2.7	28	3.4	30	3.7	42	5.0	54	6.4
	Washington	289	4.2	276	4.0	328	4.7	435	6.2	534	7.4
HIV Infection (new diagnosis)	Pierce County	52	6.4	59	7.2	44	5.4	63	7.6	47	5.6
	Washington	517	7.6	470	6.8	446	6.4	446	6.3	*	

Source: Washington State Communicable Disease Report 2015

Source: Washington State Department of Health, Office of Infectious Disease and Reproductive Health

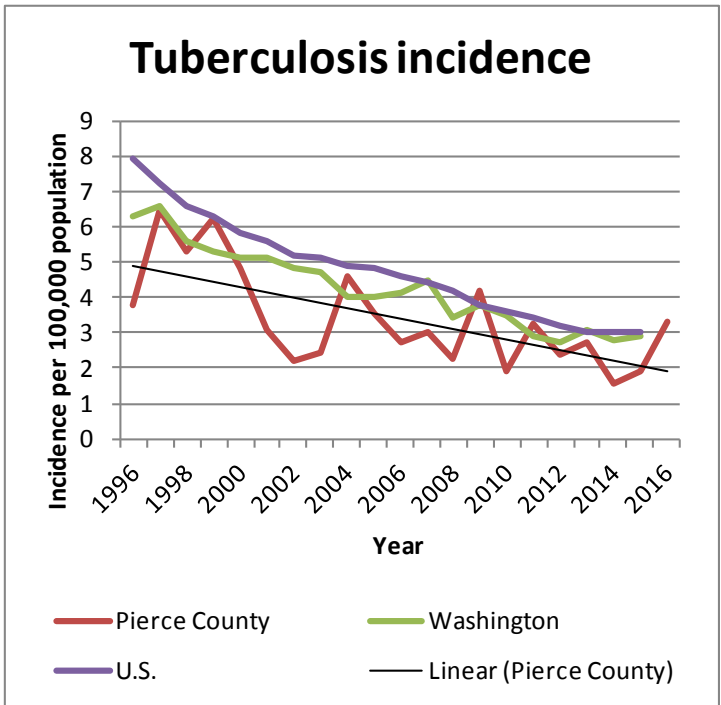
*2016 Washington State data not yet published

Tuberculosis

There were 28 confirmed cases of tuberculosis in Pierce County in 2016. Of those, 24 (86%) were born outside of the United States. Fourteen of the foreign-born cases were Asian. Seven of the Pierce County cases were inmates of the Immigration and Customs Enforcement detention center, which receives detainees from across the U.S.

Of the 22 cases of pulmonary tuberculosis, 5 had radiographic evidence of cavitory disease. Extrapulmonary sites included lymphatic (6), peritoneal (1), genitourinary (1), and bone and/or joint (1).

There were 16 culture-positive cases, two of which were multidrug-resistant. Both isolates were resistant to isoniazid, rifampin, and pyrazinamide. All of the remaining isolates were sensitive to first-line oral medications, one was monoresistant to streptomycin. One specimen from a person with extrapulmonary tuberculosis was genotypically resistant to isoniazid.



Tuberculosis		2012		2013		2014		2015		2016*	
		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	19	2.4	22	2.7	13	1.6	16	1.9	28	3.3
	Washington	185	2.7	210	3.1	194	2.8	208	2.9	*	

Source: Washington State Communicable Disease Report 2015

*Washington State data not yet published

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, four terrestrial domestic animals have been identified with rabies, the last one a cat in Jefferson County in 2015. Between 3-10% of bats submitted for testing are found to be rabid. This is a skewed population of sick and injured bats; we estimate that less than 1% of bats in the wild 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 when 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 U.S.

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

Other Reportable Diseases

Zika—Zika is a mosquito-borne flavivirus, a genus that includes yellow fever, dengue, and chikungunya. It was first discovered in primates in Uganda in 1947. Human infection was first detected in 1952 and has been found throughout sub-Saharan Africa, Southeast Asia, and the Pacific Islands. The symptoms are usually self-limiting and mild but Guillain-Barré syndrome and other neurologic conditions are recognized as sequelae. Zika virus spread to South America in 2014 and is now known to be associated with microcephaly and other anomalies when infection occurs during pregnancy. Sexual transmission and transmission from mother to fetus has been documented and transmission through blood transfusion is likely but has not been documented.

Testing is available through the Washington State Public Health lab for asymptomatic pregnant women and men or women who have at least two symptoms of Zika virus infection after travel to an affected area. Testing is also available for infants whose mothers were exposed to Zika virus during pregnancy. Infants whose mothers test positive for Zika will be enrolled in a national registry to monitor their health and development.

A negative test does not rule out Zika virus infection, so women should be advised to avoid pregnancy for at least 8 weeks after travel to an affected area regardless of a negative test result. The duration during which Zika virus can be transmitted through semen is unknown. The CDC

currently recommends couples practice safe sex for six months after a male partner returns from an affected area. Couples wishing to become pregnant should be advised of their risks prior to travel to an affected area. Zika virus infections are usually asymptomatic, so couples should not rely on an absence of symptoms as an indication of absence of infection.

In 2016, Health Department staff triaged 116 patients who had testing for Zika at the Washington State Public Health Lab. Seven patients were identified with Zika infection; 3 traveled to Mexico and 1 each traveled to Honduras and Nicaragua. None of the patients are pregnant women.

A list of Zika-affected countries is at www.cdc.gov/zika/geo/index.html. Please contact TPCHD to discuss your patient's risks for Zika virus infection and eligibility for testing at WSPHL.

		2012	2013	2014	2015	2016
Coccidioidomycosis	Pierce County	3	4	3	1	1
	Washington	8	10	14	25	*
Legionellosis	Pierce County	3	2	3	7	5
	Washington	30	52	63	58	*
Listeriosis	Pierce County	1	3	4	3	1
	Washington	26	21	24	21	*
Lyme Disease	Pierce County	1	2	0	2	6
	Washington	15	19	15	24	*
Malaria	Pierce County	3	3	4	3	6
	Washington	26	30	41	23	*
Typhoid Fever	Pierce County	0	0	1	0	1
	Washington	11	11	15	10	*
Wound Botulism	Pierce County	0	2	0	0	0
	Washington	2	4	0	2	*

Source: Washington State Department of Health
*Case Washington State data not yet published

Salmonella Infection in Neonate

During June 2016 a full-term 2-week-old boy was admitted with fever 101 F, fussiness and feeding difficulties. A septic workup was performed and blood, urine and spinal cultures all grew *Salmonella*. The infant was hospitalized for 9 days and received 6 weeks of intravenous antibiotics.

No immediate risk factors for *Salmonella* were identified. The mother reported an uncomplicated pregnancy. The baby was born full-term at home with a midwife. Mother labored in a birthing tub, but the baby was not born in the water. There was a reported history of stool contamination of the birthing tub. Mom did not recall having a diarrhea illness or ever being diagnosed with *Salmonella*. The child was breastfed.

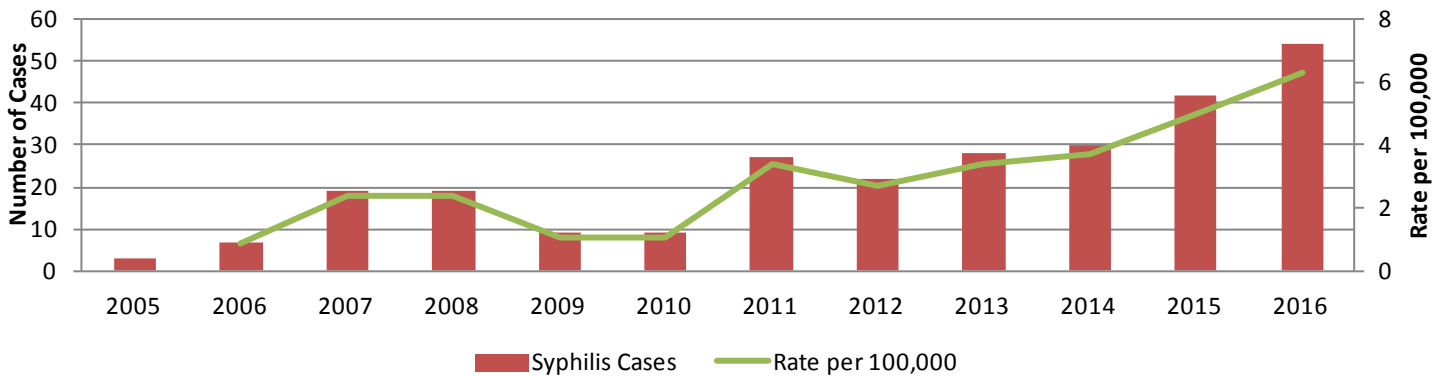
As a precaution, a culture of mom's breastmilk and stool

were collected. Her stool was positive for *Salmonella*, although she did not recall having a diarrhea illness. Mother completed 4 weeks of ciprofloxacin treatment followed by follow up stool and breastmilk cultures approximately 10 days after completing treatment, and those were negative.

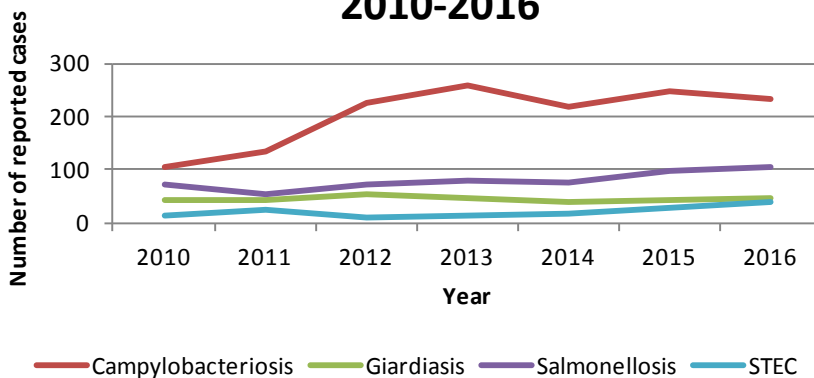
Two weeks after completing antibiotics, the child again developed a fever. Repeat CSF grew *Salmonella*, as did a stool culture. Urine and blood cultures were negative. The child was started on meropenem during admission and ciprofloxacin was added on day 5 to ensure adequate treatment of *Salmonella*. Lumbar puncture was repeated on hospital day on 3. Repeat CSF culture was no growth for 2 days at discharge. He was discharged on IV meropenem and IV ciprofloxacin per PICC line for a minimum of 6 weeks.

Disease Graphs

Primary & Secondary Syphilis Cases Pierce County WA 2005-2016



Enteric Diseases, Pierce County WA 2010-2016



Chlamydia Incidence, Pierce County WA 2010-2016

