Communicable Disease Data Report
2009-2013

For Healthcare Providers

Tacoma - Pierce County Health Department
Healthy People in Healthy Communities

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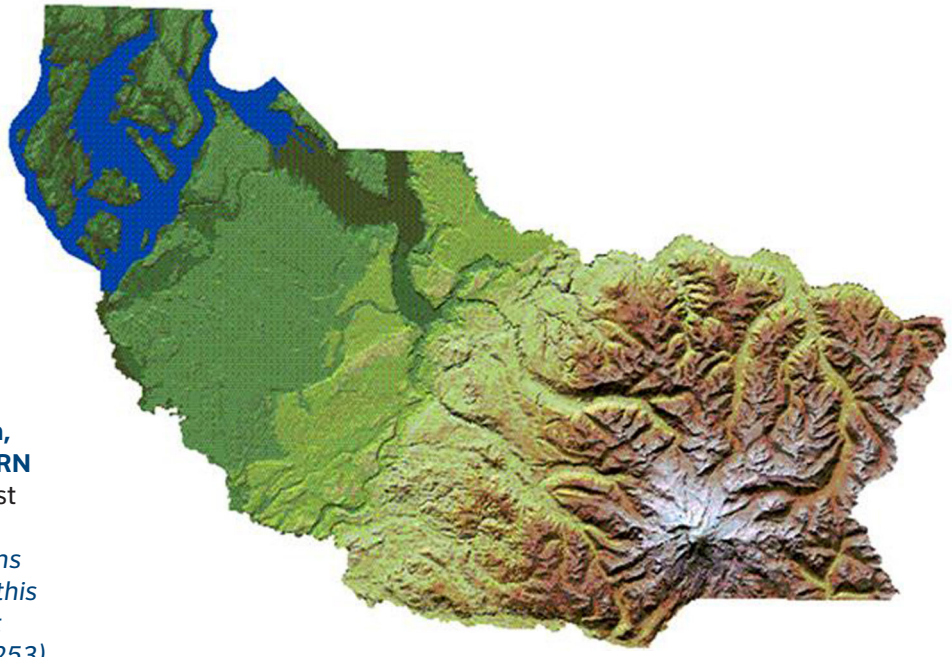
Introduction

WAC 246-101 requires healthcare providers and laboratories to report cases of certain communicable diseases to the local health jurisdiction where the patient resides.

Pierce County healthcare providers and laboratories help ensure effective communicable disease surveillance by reporting notifiable conditions to Tacoma-Pierce County Health Department in a timely manner. The Health Department is committed to ensuring that healthcare providers and laboratories have access to countywide disease data summaries to inform their practice.

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 policy, redirect program activities and refine outbreak investigation.

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

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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.

Campylobacter is on the rise nationally, and in 2012, incidence in the United States was at its highest level since 2000. Associated exposures include consumption of poultry, raw milk, produce, untreated water, and contact with animals. Much of the increase in campylobacteriosis in Pierce County (from a rate of 16.5 in 2011 to a rate of 31.1 in 2013) 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 are not uncommon so clinicians need to take into account clinical symptoms and epidemiological factors when diagnosing *Campylobacter* gastroenteritis using the antigen test.

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 those with immune systems severely weakened from medications or other illnesses. 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.

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 2013, 54% 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.

Vibriosis cases increased in 2013 statewide due to high summer temperatures that promote bacterial growth in shellfish production. Most cases are caused by consumption of raw oysters.

Enteric Diseases		2009		2010		2011		2012		2013	
		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	79	9.7	103	13.0	132	16.5	221	27.3	253	31.1
	Washington	1,030	15.4	1,315	19.6	1,538	22.7	1,551	22.7	1,631	23.7
Cryptosporidia	Pierce County	17	2.1	32	4.0	39	4.9	22	2.7	24	2.9
	Washington	102	1.5	102	1.5	88	1.3	101	1.5	83	1.2
Giardia	Pierce County	31	3.9	37	4.7	42	5.2	48	5.9	46	5.6
	Washington	467	7.0	521	7.7	529	7.8	512	7.5	548	8.0
Salmonella (non-Typhoid)	Pierce County	78	9.6	71	8.9	53	6.6	75	9.3	74	9.1
	Washington	820	12.3	780	11.6	589	8.7	842	12.4	670	9.7
Shiga toxin-producing *E. coli*	Pierce County	11	1.4	11	1.4	22	2.7	11	1.4	14	1.7
	Washington	206	3.1	226	3.4	203	3.0	239	3.5	330	4.8
Shigella	Pierce County	8	1.0	7	0.9	2	nc	5	0.6	4	0.5
	Washington	153	2.3	112	1.7	104	1.5	133	2.0	122	1.8
Vibriosis[1]	Pierce County	6	0.8	5	0.6	3	nc	4	nc	11	1.4
	Washington	48	0.7	59	0.9	45	0.7	67	1.0	90	1.3

Source: Washington State Communicable Disease Report 2013
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. Incidence began to rise in 2010 and by 2012, epidemic levels were present in many states in the United States, including Washington State. Pierce County incidence was the highest in the South Puget Sound region (96.1/100,000) and was higher than Washington State as a whole (72.1/100,000). During 2013, incidence fell, but was still higher in Pierce County than in Washington State (14.2 vs. 10.9).

Epidemiologic studies of the 2012 epidemic pertussis in Washington State showed the highest incidence was in infants under age 1 year, followed by children age 10. Incidence dropped sharply at ages 11 and 12 (after receipt of the routine Tdap dose), however rose again by age 13 and 14. This cohort of children was the first to receive only the acellular pertussis vaccine after its introduction in the late 90s. Most experts acknowledge that the acellular vaccine does not offer long lasting protection against pertussis, so until we have a more effective vaccine, epidemic cycles are predicted to continue.

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 was one case reported in 2013, a one year old baby infected with serogroup B. The currently available vaccine is given at age 11–12 and protects against types A, C, Y and W-135. In 2011, the Advisory Committee on Immunization Practices (ACIP) recommended a second dose for adolescents after age 16. In October of 2014, the FDA licensed a vaccine against serogroup B. At this time, there is no CDC recommendation for routine use of this vaccine. Vaccine against serogroup B has been used recently for campus outbreaks of meningococcal disease.

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 and Rubella—There have been no cases of measles or rubella reported in Pierce County between 2009 and 2013. There were four cases of measles reported in Washington State in 2013. Although measles elimination (i.e., interruption of continuous transmission lasting ≥12 months) was declared in the United States in 2000, importation of measles cases continues to occur. All cases in

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Vaccine Preventable Diseases		2009		2010		2011		2012		2013	
		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	0	nc	1	nc	0	nc	2	nc
	Washington[2]	9	2.1	10	2.3	8	1.8	4	nc	11	2.4
Measles	Pierce County	0	nc	0	nc	0	nc	0	nc	0	nc
	Washington	1	nc	1	nc	4	0.1	0	nc	4	0.1
Meningococcal	Pierce County	3	nc	3	nc	1	nc	3	nc	1	nc
	Washington	26	0.4	33	0.5	22	0.3	24	0.4	20	0.3
Mumps	Pierce County[1]	2	nc	3	nc	0	nc	0	nc	2	nc
	Washington	6	0.1	7	0.1	2	nc	2	nc	2	nc
Pertussis	Pierce County	29	3.6	84	10.6	129	16.1	783	96.9	116	14.2
	Washington	291	4.4	607	9.0	962	14.2	4,916	72.1	748	10.9

Source: Washington State Communicable Disease Report 2013
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. Acute hepatitis A manifests as nausea, vomiting, abdominal distress and jaundice. Liver enzymes are usually markedly elevated (ALT > 1,000) with a positive hepatitis A IgM. The most common exposure for cases of acute hepatitis A is travel to areas of the world where the disease is common. International adoptees should be screened for acute hepatitis A when they arrive, as disease is asymptomatic in infants and very young children. A baby adopted from Ethiopia in 2013 screened positive for acute hepatitis A on arrival; fortunately her adoptive family had been vaccinated per Centers for Disease Control and Prevention (CDC) recommendations.

Acute Hepatitis B—Due to widespread vaccination, incidence has declined dramatically. Acute hepatitis B often goes undiagnosed because it is frequently (50–70% of the time) asymptomatic. Most acute cases in the United States are due to sexual transmission. Hepatitis B can be also be transmitted by sharing injection equipment, needle sticks and from mother to infant during birth. Perinatal transmission is the cause of most cases of chronic hepatitis B. Chronic infection occurs in about 90% of infected infants, 30% of infected children younger than age 5, and 2–6% of adults. Although hepatitis B infection in pregnancy is reportable, CDC estimates that half of all pregnant women with positive HBsAg 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 one year to determine immune status of the child.

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.

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

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. It is estimated that up to 75% of persons with hepatitis C are unaware of their infection.

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Hepatitis		2009		2010		2011		2012		2013	
		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	5	0.6	2	nc	2	nc	1	nc	1	nc
	Washington	42	0.6	21	0.3	31	0.5	29	0.4	45	0.7
Hepatitis B, Acute (vaccine preventable)	Pierce County	9	1.1	2	nc	1	nc	1	nc	3	nc
	Washington	48	0.7	50	0.7	35	0.5	34	0.5	34	0.5
Hepatitis C, Acute	Pierce County	1	nc	2	nc	1	nc	3	nc	7	0.9
	Washington	22	0.3	25	0.4	41	0.6	54	0.8	63	0.9
Hepatitis B, Chronic[1]	Pierce County	124	15.2	103	13.3	96	12.0	119	14.7	[1]0	[1]0.0
	Washington	1,301	19.5	1,284	19.1	1,027	15.2	1,060	15.5	[1]0	[1]0.0
Hepatitis C, Chronic[2]	Pierce County	884	108.7	731	91.9	741	92.4	576	71.3	723	88.8
	Washington	5,746	86.2	4,925	73.2	6,091	90.0	4,631	67.9	4,434	64.4

Source: Washington State Communicable Disease Report 2013
nc = not calculated
[1]2013 hepatitis B information was not available at time of publishing. An update to this report will be provided at a later time.
[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 2013, healthcare providers in Pierce County reported 4,298 cases of chlamydia. Pierce County has the second highest rate of chlamydial infection in Washington State (527.7 per 100,000). Most 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.

Gonorrhea—In 2013, Washington State and Pierce County continued to experience an increase of reported gonorrhea. Healthcare providers in Pierce County reported 966 cases of gonorrhea (rate of 118.6 per 100,000), up from 657 cases in 2012. According to Washington State Department of Health's estimates, approximately 10% of those reported with gonorrhea are infected with HIV. Because of this, the Health Department recommends that providers screen any patient with gonorrhea for HIV. 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 lab results become available.

Syphilis (Primary and Secondary)—In 2013, Pierce County reported 28 cases of primary and secondary syphilis. Many of the syphilis cases have been in men who have sex with men (MSM) who are also infected with HIV. Because of this, the Health Department recommends that providers conduct syphilis testing for all male patients who have sex with men, 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 MSM; 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 of their patients at least once and annually for all patients who are known to be at risk (especially MSM).

Sexually Transmitted Diseases		2009		2010		2011		2012		2013	
		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	3,861	474.6	3,815	479.7	4,159	518.5	4,293	531.2	4,298	527.7
	Washington	21,178	317.6	21,401	318.3	23,237	343.3	24,600	360.8	25,013	363.4
Gonorrhea	Pierce County	457	56.2	414	52.1	424	52.9	657	81.3	966	118.6
	Washington	2,268	34.0	2,865	42.6	2,730	40.3	3,282	48.1	4,390	63.8
Herpes (genital, initial infection)	Pierce County	261	32.1	248	31.2	327	40.8	346	42.8	364	44.7
	Washington	1,875	28.1	2,028	30.2	2,149	31.8	2,197	32.2	2,207	32.1
Syphilis (primary and secondary)	Pierce County	9	1.1	9	1.1	27	3.4	22	2.7	28	3.4
	Washington	135	2.0	261	3.9	329	4.9	300	4.4	285	4.1
HIV Infection (new diagnosis)	Pierce County	62	7.6	61	7.7	56	7.0	53	6.6	59	7.2
	Washington	556	8.3	556	8.3	496	7.3	517	7.6	470	6.8

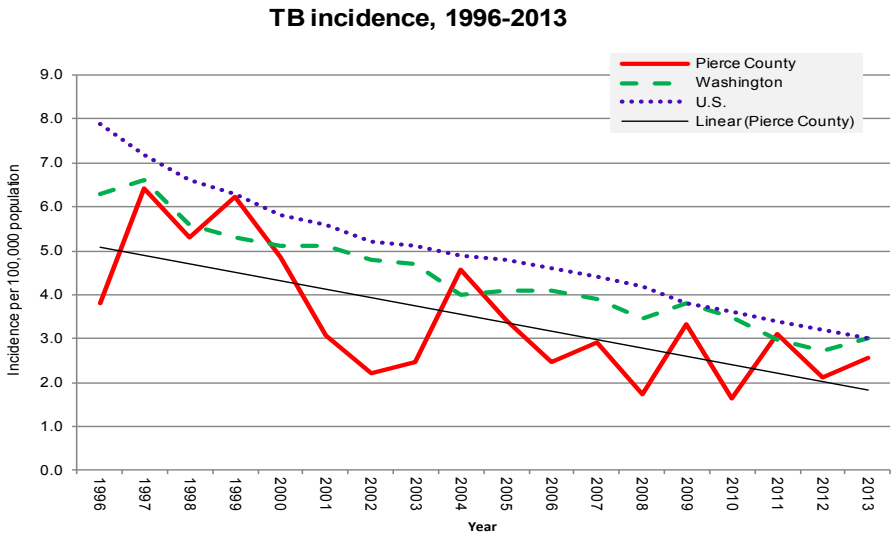
Source: Washington State Communicable Disease Report 2013

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 22 confirmed cases of tuberculosis in Pierce County in 2013. Of those, 19 (86%) were persons born outside of the United States. Half of all Pierce County tuberculosis cases were Asian.

Out of 19 isolates tested for drug resistance, 17 were sensitive to all first-line drugs. Two were resistant to one first-line drug (one isoniazid resistant and one pyrazinamide resistant).



Of the 18 cases of pulmonary tuberculosis, 14 had radiographic evidence of cavitary lesions, a marker for advanced disease. All patients were HIV seronegative at diagnosis.

Tuberculosis		2009		2010		2011		2012		2013	
		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	34	4.2	15	1.9	25	3.1	19	2.4	22	2.7
	Washington	256	3.8	236	3.5	200	3.0	185	2.7	209	3.0

Source: Washington State Communicable Disease Report 2013

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

Coccidioidomycosis—There have been 10 reported Pierce County cases between 2009–13. Also called Valley Fever, this fungal infection is common in the Southwestern United States. The fungus has recently been found in soil in Eastern Washington through investigation of illness in a case who had not traveled outside Washington State. The infection is usually asymptomatic but can be severe, especially for the elderly or immune compromised. People of Filipino or African American background are at higher risk for disseminated disease. In 2013, a young African-American man in Pierce County with a remote history of travel to an endemic area died of disseminated coccidioidomycosis.

Legionellosis—There were 12 reported cases between 2009 and 2013; all were hospitalized, and two patients died. Seven cases were related to travel. Because travelers disperse, clinicians may not detect cases with the same travel-related exposure, e.g., a hotel shower or sauna. Test for *Legionella* in community-acquired pneumonia cases who traveled in the two weeks prior to symptom onset.

Listeriosis—Ten cases ranging in age from newborn to 87 years occurred between 2009 and 2013. Nine of the cases were hospitalized, none died. This invasive bacterial disease is usually acquired through contaminated food and affects the elderly, pregnant women, infants and person with immune system compromise. Risky foods include processed deli meats, soft or blue veined cheese, raw milk, smoked fish and pates. The largest listeriosis outbreak in United States history occurred in 2011, when 147 illnesses, 33 deaths, and one miscarriage occurred among residents of 28 states; the outbreak was associated with consumption of cantaloupe from a single farm.

Lyme Disease—Most cases are exposed outside Washington State. *Ixodes pacificus* (deer tick) is the vector in the Pacific Northwest, and it is likely that the tick must attach for least 24 hours to transmit Lyme disease. Two-tiered testing is recommended by the CDC; the algorithm is available at www.cdc.gov/lyme/diagnosistesting/LabTest/TwoStep.

Rare Reportable Disease Investigated in 2013

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		2009	2010	2011	2012	2013	2009–2013 Cases
Coccidioidomycosis	Pierce County	0	0	3	3	4	10
	Washington	6	10	10	8	10	44
Legionellosis	Pierce County	2	1	4	3	2	12
	Washington	29	35	43	30	52	189
Listeriosis	Pierce County	2	4	0	1	3	10
	Washington	24	24	19	26	21	114
Lyme Disease	Pierce County	1	1	2	1	2	7
	Washington	16	16	19	15	19	85
Malaria	Pierce County	2	3	1	3	3	12
	Washington	26	39	24	26	30	145
Typhoid Fever	Pierce County	0	1	0	0	0	1
	Washington	4	22	9	11	11	57
Wound Botulism	Pierce County	2	1	0	0	2	5
	Washington	4	1	4	2	4	15

Source: Washington State Department of Health

Vaccine Preventable Diseases (continued from page 3)

the United States are the result of importation from foreign travel and subsequent transmission to susceptible people. Two MMR are recommended for persons over age 12 months. 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.

Mumps—Pierce County had two mumps cases in 2013. One of the cases was a young man exposed during travel to New Jersey, where there was an outbreak of mumps. The patient developed mumps encephalitis and spent several days in intensive care. The patient had documentation of one dose of MMR. The mumps component of the MMR has a lower effectiveness compared to the measles and rubella components. Mumps 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.

Many different viruses can cause parotitis. Diagnosis of acute mumps using serology alone is problematic as the results in vaccinated persons are unreliable. A buccal swab for viral culture is recommended and can be done at the Washington State Public Health Laboratory (WSPHL). If mumps is suspected, call the Health Department to coordinate testing at WSPHL.

***Haemophilus influenzae* Invasive Disease**—It is reportable only for cases under age 5 years. In 2013 there were two cases reported. Invasive *Hemophilus influenzae* type B (Hib) disease has all but disappeared due a very effective vaccine against serotype B which is given in infancy. Prior to the introduction of the conjugate vaccine in 1988, Hib was the most common cause of bacterial meningitis in young American children.

Hepatitis (continued from page 4)

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 PCR.

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 higher cure rates (sustained viral response) for persons with hepatitis C. However, relatively few people have been treated with the newer regimens because of the high cost-up to $84,000 for a 12-week regimen. Persons with chronic hepatitis C who are awaiting a decision for treatment should be counseled to avoid alcohol. Obesity is also a risk factor for disease progression.

Other Reportable Diseases (continued from page 7)

Wound Botulism—There were five cases from 2009 through 2013. Wound botulism is almost always associated with injection drug use and presents as a descending paralysis with double vision, ptosis and slurred speech. Immediately contact Tacoma-Pierce County Health Department if you suspect wound botulism, especially in an individual with a history of injection drug use. Call (253) 798-6410. The Health Department will then work with the Washington State Department of Health and CDC to determine, based on clinical presentation, whether to release antitoxin for treatment.

Carbapenem-resistant enterobacteriaceae (CRE)—These organisms are resistant to all third generation cephalosporins tested and resistant to at least one carbapenem antibiotic. The most concerning are those CRE that produce carbapenemase, as these organisms can confer resistance to other species of bacteria. Washington State surveillance in 2013 identified 108 CRE isolates; ten were carbapenemase producers (CP-CRE). People with underlying medical conditions and acute care hospitalizations or long-term care are more likely to become infected with CRE. CP-CRE are rare in Washington State and are frequently associated with international travel or hospitalizations.