For Healthcare Providers

COMMUNICABLE DISEASE REPORT
2007-2011

The purpose of notifiable condition reporting is to provide the information necessary for public health officials to protect the public's health by tracking communicable diseases and other conditions. Based on these reports, public health officials take steps to protect the public, such as ensuring treatment of persons already ill, ensuring preventive therapies for individuals who came into contact with infectious agents, investigating and halting outbreaks, and removing harmful health exposures. Public health workers also use the data collected during investigations to assess broader patterns, including historical trends and geographic clustering. By analyzing the broader picture, public health is able to take appropriate actions, including outbreak investigation, redirection of program activities, and policy development.

SPOKANE REGIONAL HEALTH DISTRICT
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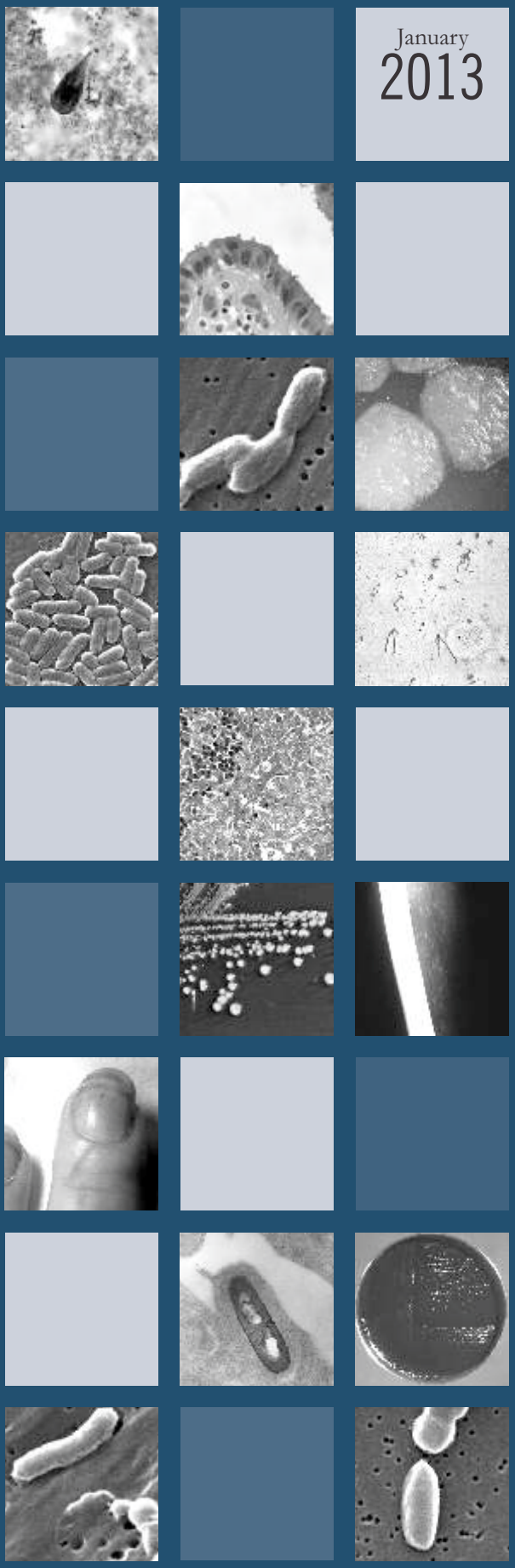

This report presents summary data about notifiable conditions reported to the Spokane Regional Health District (SRHD) in 2011, with local, state and national data for the last 5 year period (2007-2011), as available and pertinent.

ENTERIC DISEASE

Enteric (gastrointestinal) disease is most frequently caused by food- or water-borne pathogens. These illnesses are largely preventable through good hygiene, proper food handling and thorough cooking, and appropriate animal handling. Enteric infections including shigellosis, salmonellosis, Shiga toxin- producing *Escherichia coli* (STEC) and giardiasis are more frequently reported in children up to 5 years of age.

In 2011, rates of all enteric diseases, with the exception of campylobacteriosis, were down or static locally and statewide. It is unclear whether this represents a positive trend in disease control, or decreased use of the health care system and/or lack of case reporting.

Although the number of campylobacteriosis cases reported in Spokane County in 2011 declined significantly, it remains the most frequent cause of reported bacterial gastroenteritis in Spokane County, as is true in Washington and the United States. Most cases are sporadic and outbreaks involving multiple persons and person-to-person spread are uncommon. Statewide in 2011, reported cases increased 42% over recent years (the five-year average is 1,085 cases per year). One hundred sixty-four hospitalizations due to campylobacteriosis were reported.

Listeriosis, salmonellosis, shigellosis, yersiniosis and STEC infections are reported less often in Spokane County residents as compared to other state residents. Statewide, salmonellosis is the second most common notifiable enteric infection with a range of 589-850 cases reported per year. Salmonella infections occur year round with some increase during the spring and summer months and many serotypes are reported.

In Washington in 2010, a total of 203 STEC cases were reported; 14 had Hemolytic Uremic Syndrome as a complication. Among 189 confirmed cases, only 104 (55%) were serogroup O157. The recent increase of non-O157 STEC cases reported reflects new laboratory testing practices. The 85 non-O157 STEC infections included 35 serogroup O26, 20 serogroup O103, 17 serogroup O121, 5 serogroup O145, 2 serogroup O119, and one case each of the O103, O111, O165, O69, O71, and O80 serogroups.

Although not a reportable illness, SRHD monitors outbreaks of gastroenteritis, particularly those associated with long term care facilities, due to the fragile health of many residents in those institutions. In 2011, 26 such outbreaks were reported, affecting at least 1,100 individuals; 8 of the outbreaks were confirmed to be caused by Norovirus.

ENTERIC DISEASE

		2007		2008		2009		2010		2011	
		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
Campylobacteriosis	Spokane County	73	16.2	79	17.2	62	13.3	73	15.5	54	11.5
	Washington State	1020	15.7	1,069	16.2	1,030 (1 death)	15.4	1,315 (2 deaths)	19.5	1,538	22.7
Cryptosporidiosis	Spokane County	6	1.3	2	*	4	*	4	*	1	*
	Washington State	139	2.1	99	1.5	102	1.5	102	1.5	88	1.3
Enterohemorrhagic *E. coli* (EHEC)	Spokane County	3	*	6	1.3	10	2.2	11	2.3	14	3.0
	Washington State	141	2.2	189 (1 death)	2.9	206	3.1	226 (1 death)	3.4	203 (1 death)	3.0
Giardiasis	Spokane County	57	12.6	47	10.2	55	11.8	47	10.0	31	6.6
	Washington State	590	9.1	486	7.4	467	7.0	521	7.7	529	7.8
Listeriosis	Spokane County	0	*	1	*	1	*	0	*	1	*
	Washington State	25 (2 deaths)	0.4	29 (3 deaths)	0.4	24 (4 deaths)	0.4	24 (1 death)	0.4	19 (2 deaths)	0.3
Salmonellosis	Spokane County	37	8.2	39	8.5	41	8.8	46	9.8	39	8.3
	Washington State	758 (2 deaths)	11.7	846 (3 deaths)	12.8	820 (2 deaths)	12.3	780 (3 deaths)	11.6	589 (2 deaths)	8.7
Shigellosis	Spokane County	2	*	4	*	4	*	3	*	4	*
	Washington State	159	2.5	116	1.8	153	2.3	112	1.7	104	1.5

* Incidence rates not calculated for <5 cases.

VACCINE-PREVENTABLE DISEASE

During 2007-2011, there was no significant change in overall rates for diseases prevented by standard childhood immunizations, except for pertussis. There were no reported cases of measles, mumps, rubella, tetanus or diphtheria in Spokane County.

Unimmunized or under-immunized infants and children are at risk for *Haemophilus influenzae (H.flu)* infection. In 2011, eight cases of *H.flu* in Washington children under 5 years of age were reported, with one death. Seven of the 8 cases were hospitalized, with 4 requiring intensive care.

Measles was declared eliminated from the United States in 2000 and elimination has been maintained through high population immunity. Nonetheless, measles remains endemic in much of the world and importations continue to result in sporadic cases and small outbreaks in the U.S. Of the 47 cases that occurred in U.S. residents in 2010, 41 (87%) were unvaccinated or had undocumented vaccination status, 2 (4%) had received 1 dose of MMR vaccine, and 4 (9%) had received the recommended 2 doses of MMR vaccine.

During 2006-2007, reported cases of pertussis spiked locally, but returned to low levels in subsequent years. This variability of rates was also seen statewide and in 2011 the number of pertussis cases reached a six year high. A total of 965 cases (14.3 /100,000 population) were reported. Rates were highest for children under 1 year of age (137/100,000). Of cases aged 3 months to 10 years, 61% were reported as being "up to date" for their childhood pertussis vaccine series. Receipt of Tdap vaccine was documented in the case report for 53% of cases 11-12 years old and 76% of cases 13-18 years old.

Nationally, 18,719 pertussis cases were reported in 2011. While adolescents (aged 11–19 years) and adults accounted for approximately 47% of reported cases in 2011, persons aged 7-10 years constituted a significant proportion (18%) of cases.

Along with pertussis and hepatitis A and B (see next section), two other vaccine preventable diseases occur regularly in Spokane County – meningococcal disease and influenza. In the United States, almost all cases of meningococcal disease are caused by serogroups B, C and Y, but the vaccine currently licensed in the U.S. protects against serogroups A, C, Y and W-135 only. The highest incidence of meningococcal disease occurs among infants, with a second peak occurring in late adolescence. In 2011, isolates from all Washington cases were submitted for determination of serogroup –12 were serogroup B, 7 serogroup Y, 2 serogroup C, and 1 serogroup W-135. No deaths occurred and there were no reports of breakthrough disease among vaccinated adolescents.

Only persons hospitalized due to influenza are reportable in Spokane County. During the 2011-2012 flu season, 98 Spokane County residents were hospitalized; hospitalizations peaked in March. Flu vaccination of the general population is estimated to be in the 40% range most years.

VACCINE-PREVENTABLE DISEASE

		2007		2008		2009		2010		2011	
		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 invasive disease ▲	Spokane County	0	*	0	*	0	*	0	*	0	*
	Washington State	6	1.4	2	*	9	2.0	10 (1 death)	2.2	8 (1 death)	0.1
Measles	Spokane County	0	*	0	*	0	*	0	*	0	*
	Washington State	3	*	19	0.3	1	*	1	*	4	0.1
Meningococcal Disease	Spokane County	3	*	8	1.7	4	*	2	*	0	*
	Washington State	32 (8 deaths)	0.5	40 4 deaths)	0.6	26 3 deaths)	0.4	33 (3 deaths)	0.5	22	0.3
Mumps	Spokane County	0	*	0	*	1	*	0	*	0	*
	Washington State	53	0.8	14	0.2	6	0.1	7	0.1	2	*
Pertussis	Spokane County	34	7.5	6	1.3	4	*	7	1.5	18	3.8
	Washington State	482	7.4	460 (1 death)	7.0	291	4.4	607 (2 deaths)	9.0	962 (2 deaths)	14.2

▲ In persons aged <5 years old

* Incidence rates not calculated for <5 cases.

HEPATITIS

Hepatitis B

The number of hepatitis A cases has consistently been five or fewer cases per year in the last decade in Spokane County.

Hepatitis B

Typically, 15-31% of all hepatitis B cases reported are acute. For unknown reasons, until 2011 the rate of acute hepatitis B in Spokane County was generally at least twice the state rate. Acute infection with hepatitis B leads to chronic disease in 5-10% of adults and in 90% of children born to infected mothers, if the infant is not prophylactically treated. Statewide in 2011, none of the 318 infants born to hepatitis B surface antigen positive women were perinatally infected.

Hepatitis C

Due to the often unrecognized symptoms of hepatitis C infection, acute disease is infrequently diagnosed – typically less than 2% of reported cases are acute – and reported cases are commonly fewer in number than those of acute hepatitis B. Infection with hepatitis C leads to chronic illness in 80-85% of adults. Consistent with its capacity to progress to chronic disease, hepatitis C constitutes the largest portion of hepatitis cases, with a range of 400-550 cases usually reported to SRHD each year.

Statewide, a range of 5,000-7,000 cases were reported annually from 2005 to 2008. Males have higher rates of infection in all age categories except for those under 25, where females and males have equivalent rates of disease.

From December 2000 through June 2010, 210 persons in Spokane and 2,140 persons statewide were reported to be co-infected with hepatitis B and hepatitis C; 67% were male. Co-infection is most frequently diagnosed among individuals 35-44 years of age.

Hepatitis, especially hepatitis C, contributes significantly to premature mortality. The number of hepatitis B deaths is stable at about 51 per year, but the annual number of hepatitis C deaths has climbed continuously since 1992 and reached about 500 in 2008. Overall, 20% of all females in Washington who died in 2004-2008 were less than 65 years of age. Among those who had hepatitis B, 63% died before the age of 65, and among those with hepatitis C, 76% died before the age of 65. Among all males who died during 2004-2008, 33% were less than 65 years of age, while among those with hepatitis B and C, 77% and 86%, respectively, died before the age of 65. This may reflect both the effects of disease and risk factors contributing to the disease, such as injection drug use, that also affect mortality.

HEPATITIS

		2007		2008		2009		2010		2011	
		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	Spokane County	3	*	2	*	1	*	0	*	0	*
	Washington State	60	0.9	51	0.8	42 (1 death)	0.6	21	0.3	31 (1 death)	0.5
Hepatitis B, Acute	Spokane County	21	4.7	8	1.7	10	2.2	12	2.6	1	*
	Washington State	71 (1 death)	1.1	56	0.9	48	0.7	50 (1 death)	0.7	35	0.5
Hepatitis B, Chronic	Spokane County	8	17.7	67	14.6	88	18.8	78	16.6	59	12.5
	Washington State	1,550	23.9	1,606	24.1	1,274 (through 06/30/10)		N/A		N/A	
Hepatitis C, Acute	Spokane County	2	*	5	1.1	7	1.5	4	*	10	2.1
	Washington State	18	0.3	25	0.4	22	0.3	25	0.4	41	0.6
Hepatitis C, Chronic	Spokane County	539	119.5	416	90.6	401	86.0	425	90.2	545	115.3
	Washington State	6,039	93.1	6,916	105.0	5,514 (through 06/30/10)		N/A		N/A	

* Incidence rates not calculated for <5 cases.

VECTOR-BORNE DISEASE

Vector-borne diseases occur infrequently in Spokane County and in Washington State. Surveillance for these diseases allows examination of changes in prevalence and geographic distribution. For example, since *Ixodes* ticks, the primary vectors for Lyme disease, have not been detected in our environs, Lyme disease diagnosed in Spokane County is presumably acquired out of the area (primarily in the Eastern or Midwestern U.S., or occasionally, in Western Washington.) Tick-borne relapsing fever, carried by *Ornithodoros hermsi* ticks, occurs more frequently in Eastern and Central Washington, as well as Northern Idaho, than in Western Washington.

West Nile Virus (WNV) disease was first detected in the United States in 1999, and the first human WNV infections acquired in Washington were reported in 2006. In 2009, Washington had the highest number of cases reported to date, with 38 cases and 2 viremic blood donors. Of these cases, 36 were known to be endemically acquired within Washington. In 2011 no WNV cases were reported. Other than WNV disease, the last reported human arboviral infection acquired in the state was western equine encephalitis in 1988.

In recent years, 10-20 cases of travel-associated dengue fever and a few travel-associated Chikungunya cases have been reported annually in Washington.

Hantavirus Pulmonary Syndrome, due to exposure to infected mice and their excreta, has never been diagnosed in a Spokane County resident, although cases have been reported from surrounding counties, and Washington has the 5th largest number of cases (43) in the U.S.

In 2011, Spokane County had a small outbreak of Legionellosis cases related to a health care facility. Statewide in 2011, of 43 reported Legionellosis cases, 21 (48%) were admitted to intensive care units and 10 (23%) required ventilation. The median age was 64 years (range 26-90) and 36 (84%) reported at least one of the following risk factors: chronic liver disease, immunosuppressive therapy, chronic diabetes, chronic lung disease, or smoking. Of cases with a species identified, 32 (89%) were infected with *L. pneumophila*. Twelve (28%) were travel-associated illnesses.

VECTOR-BORNE DISEASE & LEGIONELLOSIS

		2007		2008		2009		2010		2011	
		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
Arboviral Disease▲ (previously viral encephalitis)	Spokane County	0		0		2		0		0	*
	Washington State	16		20		54		24		9	
Hantavirus pulmonary syndrome	Spokane County	0	*	0	*	0	*	0	*	0	*
	Washington State	2	*	2	*	3	*	2	*	2 (1 death)	*
Lyme Disease (travel-related)	Spokane County	1	*	0	*	1	*	1	*	0	*
	Washington State	12	0.2	23	0.3	16	0.2	16	0.2	19	0.3
Malaria (travel-related)	Spokane County	1	*	4	*	0	*	2	*	1	*
	Washington State	30	0.5	32	0.5	26	0.4	39 (1 death)	0.6	24	0.4
Tick-borne relapsing fever	Spokane County	5	1.1	1	*	1	*	1	*	1	*
	Washington State	9	0.1	4	*	5	0.1	7	0.1	11	0.2
Legionellosis	Spokane County	1	*	1	*	2	*	3	*	5 (1 death)	1.06
	Washington State	24 (2 deaths)	0.4	19 (2 deaths)	0.3	29 (2 deaths)	0.4	35 (4 deaths)	0.5	43 (4 deaths)	0.6

▲ Including yellow fever, WNV disease, dengue, and Japanese encephalitis

* Incidence rates not calculated for <5 cases

HIV/AIDS

AIDS has been a reportable disease in Washington since 1982, and for many years the number of cases reported was used to estimate the incidence of HIV disease. Over time, as treatment and longevity after diagnosis of HIV infection improved, HIV disease came to be regarded more often as a chronic infection. Consequently, in 1999 HIV infection also became reportable, allowing better assessment of the burden of disease. The rate of incident disease has been mostly stable statewide and locally since 2002.

Note: HIV incidence data does not include persons who have anonymously tested positive but who have not yet entered into medical care. Once medical care is accessed, the case is reported and counted.

Based on the public health approach of testing individuals at high risk for HIV disease, staff at the Spokane Regional Health District detected 7/18 (39%), 8/21(38%), 8/26 (31%), respectively, of new cases of HIV reported in 2009, 2010, and 2011 in Spokane County. As of 12/31/2011, there were 441 individuals in the county living with HIV disease, 60% of whom had a diagnosis of AIDS.

Statewide in 2011, more than 11,000 people known to be living with HIV disease were Washington residents and 57% had a diagnosis of AIDS. Eighty-six percent were male and of those 72% were men who have sex with men (MSM). The most common decade of life for diagnosis of HIV was 30-39 for men and 20-29 for women. Sixteen percent of Washington State people living with HIV disease were foreign-born.

Between 2002 and 2010, the percent of newly diagnosed cases who were MSM increased and the percent of newly diagnosed cases who were injection drug users decreased. The proportion of individuals under age 30 years, who are Hispanic, and who were not born in the U.S. all increased relative to others newly diagnosed with HIV.

HIV/AIDS

		2007		2008		2009		2010		2011	
		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
Incident HIV Disease*	Spokane County	36	8.0	26	5.7	18	3.9	21	4.5	26	5.5
	Washington State	591 (95 deaths)	9.1	541 (86 deaths)	8.2	550 (100 deaths)	8.2	551 (86 deaths)	8.2	514 (47deaths)	7.6

* Incident HIV Disease refers to all newly identified cases of HIV disease, with or without AIDS.

SEXUALLY TRANSMITTED INFECTION (STI)

STIs continue to be the most commonly reported of all communicable diseases in Washington, and account for at least 75% of all notifiable conditions reported to the Washington State Department of Health in 2011. Cases of chlamydia, syphilis, initial adult genital herpes infection, and neonatal herpes increased in 2011 as compared to 2010.

Chlamydial Infection

Reports of chlamydial infection comprise the majority of all notifiable condition reports received in Spokane County. After a significant increase in case reports in 2008, the rate dropped in 2009 and 2010, only to return in 2011 to a rate equivalent to the 2008 rate. Spokane County had the 5th highest rate of chlamydial infection reported by county and the rate is higher than that reported for the state as a whole.

In Washington State, chlamydia also continues to be the most commonly reported STI. The chlamydia incidence rate has showed a steady rise since 1998, but was relatively stable between 2008 and 2010, until it rose significantly (~8%) in 2011. The overall incidence rate for Washington State was 343/100,000. Sixty-eight percent of reported cases were in persons 24 and younger.

Gonorrhea

Locally, the rate of reported gonorrhea cases rose in 2011 by 15% as compared to 2010.

Statewide, the number and rate of cases was not significantly different than in 2010. Fifty percent of all reported cases reside in King County. The greatest incidence of gonorrhea is in males and females 20-24 years of age.

Syphilis

Syphilis is caused by infection with the spirochete *Treponema palladium*. Syphilis occurs in four overlapping stages – primary, secondary, latent, and late – all of which were reported in 2010. Primary and secondary (P & S) syphilis are the infectious states of the disease, and indicate likely acquisition of the illness in the preceding year. Locally, rates of P & S syphilis were stable until 2011, when the number of cases increased significantly. Still, the rate of P&S syphilis remained lower than the state rate.

Statewide, significant increases in the number of P&S syphilis cases were seen in both 2010 and 2011. Almost 85% of the reported P&S syphilis cases occurred in people residing in the Puget Sound area. There continues to be a large disparity between rates in males and females, consistent with what has been observed since 1997 - cases occur primarily in MSM in urban areas. Fifty-four percent of the P&S syphilis cases were co-infected with HIV.

Eight cases of neonatal herpes and no cases of congenital syphilis were reported in 2011 in Washington State.

SEXUALLY TRANSMITTED INFECTION

		2007		2008		2009		2010		2011	
		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	Spokane County	1,259	279.0	1,719	374.5	1,637	352.0	1,617	343.8	1,780	376.6
	Washington State	19,123	294.7	21,327	323.7	21,178	317.6	21,401	317.8	23,237	343.3
Gonorrhea	Spokane County	207	45.9	272	59.3	131	28.2	137	29.1	158	33.4
	Washington State	3,646	56.2	3,116	47.3	2,268	34.0	2,865	42.6	2,730	40.3
Herpes (initial infection)	Spokane County	132	29.3	187	40.7	158	34.0	174	37.0	185	39.1
	Washington State	1,952	30.1	2,009	30.5	1,875	28.1	2,028	30.1	2,149	31.8
Syphilis, early infectious, <1 yr.	Spokane County	6	1.3	5	1.1	7	1.5	4	*	14	3.0
	Washington State	168	2.6	181	2.7	135	2.0	261	3.9	329	4.9

* Incidence rates not calculated for <5 cases.

TUBERCULOSIS (TB)

The crude incidence rate for tuberculosis (TB) is consistently lower in Spokane County than in Washington State. During 2007-2011, 34 active TB cases were identified and/or treated in Spokane County. In 2011, 8 active cases of TB were reported; all started treatment and 5 completed treatment. Twenty contacts of the cases were identified and tested; one was positive for TB infection and started on latent TB infection (LTBI) medications. An additional 138 individuals identified as having LTBI were seen initially through the SRHD clinic and 74 of them completed treatment through SRHD; other LTBI cases were referred to private providers, refused treatment or were lost to follow-up.

Over the last decade, the annual crude incidence rate of TB in Washington State has trended downward to the current low of 3.0/100,000. As in years past, foreign-born persons as well as racial and ethnic minorities are at greatest risk for TB. The highest case rates are among those 65 and older; persons 25-44 years of age comprised about one-third of cases. King, Yakima and Clark counties have had the highest case rates in recent years. Of the 195 case specimens tested for drug susceptibility, just over 10% were resistant to isoniazid, the first line treatment. Five (2.3%) specimens were multi-drug resistant (MDR) and 2 of those were resistant to all first-line drugs.

A total of 10,528 TB cases (3.4/100,000 persons) were reported in the United States in 2011. This number is the lowest recorded since national reporting began in 1953. Sixty-two percent of reported TB cases occurred in foreign-born persons, and the case rate among foreign-born persons (17.2/100,000) in 2011 was approximately 11.5 times higher than among U.S.-born persons (1.5/100,000). Nationally, the TB rate is highest in Asians (20.9/100,000) and Native Hawaiians and other Pacific Islanders (15.9/100,000). Nearly half of TB cases reported in 2011 resided in either California or Texas.

Primary *MDR TB* disproportionately affects foreign-born persons in the United States. Since 1997, the percentage of U.S.-born patients with primary *MDR TB* has remained below 1.0 percent, but the proportion occurring in foreign-born persons increased from 25.3% in 1993 to 82.7% in 2011. For persons with a previous history of TB, the percentage with *MDR TB* in 2010 was approximately 4 times greater than among persons not previously treated for TB.

Four cases of extensively drug-resistant TB (XDR-TB), all occurring in foreign-born persons, were reported in the U.S. in 2011.

TUBERCULOSIS

		2007		2008		2009		2010		2011	
		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	Spokane County	5	1.1	8	1.7	9	1.9	4	*	8	1.7
	Washington State	291 (12 deaths)	4.5	228 (2 deaths)	3.5	256 (9 deaths)	3.8	236 (6 deaths)	3.5	200 (8 deaths)	3.0

* Incidence rates not calculated for <5 cases.

References: Spokane Regional Health District data, Washington State Communicable Disease Report 2011, Washington State HIV Surveillance Report - 2nd Quarter 2012, Washington State Chronic Hepatitis B and Chronic Hepatitis C Surveillance Report - June 2010

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