For Healthcare Providers

# COMMUNICABLE DISEASE REPORT 2006-2010

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.





## **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. Enteric infections including shigellosis, salmonellosis, enterohemorrhagic *Escherichia coli* (EHEC) and giardiasis are more frequently reported in children up to 5 years of age.

Campylobacteriosis remains the most frequent cause of reported bacterial gastroenteritis in Spokane County, as is true in Washington state and the United States; most cases are sporadic and outbreaks involving multiple persons and person-to-person spread are uncommon. Statewide in 2010, 1,315 cases with 142 hospitalizations and two deaths were reported. This is the largest number of cases reported since the 1990s, and 30% greater than the most recent five-year

average of 1,031 cases per year. There were no common source outbreaks identified.

Each year the rate of reported giardiasis is significantly greater in Spokane County than in Washington, and the most frequently reported exposures include recreational water and international travel.

Listeriosis, salmonellosis, shigellosis, yersiniosis and EHEC infections are reported less often in Spokane County residents as compared to state residents as a whole. Statewide, salmonellosis is the second most common notifiable enteric infection with 625 to 850 cases reported per year. Infections occur all year with some increase during the spring and summer months; many serotypes are reported. Nationally, the reported number of cases of salmonellosis and shigellosis has remained relatively stable during the past two decades.

In Washington in 2010, a total of 226

EHEC cases were reported; 12 reported hemolytic uremic syndrome as a complication. Among 186 confirmed cases only 110 (59%) were serogroup O157. A recent substantial rate increase of non-O157 EHEC (1.1 in 2010 vs. 0.5 in 2009) reflects new laboratory testing practices. The 76 non-O157 EHEC infections included 45 serogroup O26, 12 O103, 6 O121, and 3 each O111 and O45.

#### **Norovirus Gastroenteritis**

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 2010, 21 such outbreaks were reported involving at least 555 individuals; three of the outbreaks were confirmed to be caused by Norovirus.

ENTERIC DISEASE		06	2007	2007		2008		2009		10
		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 Washington State	67 993	15.1 15.6		16.2 15.7	79 1,069	17.2 16.2	62 1,030 (1 death)	13.3 15.4	73 1,315 (2 deaths)	15.5 19.5
Cryptosporidiosis Spokane County Washington State	4 95	* 1.5	6 139	1.3 2.1	2 99	* 1.5	4 102	* 1.5	4 102	* 1.5
Enterohemorrhagic Spokane County E. coli (EHEC) Washington State	9 162	2.0 2.5	3 141	* 2.2	6 189 (1 death)	1.3 2.9	10 206	2.2	11 226 (1 death)	2.3 3.4
Giardiasis Spokane County Washington State	56 451	12.6 7.1	57 1 591	12.6 9.1	47 486	10.2 7.4	55 467	11.8 7.0	47 521	10.0 7.7
Listeriosis Spokane County Washington State	0 18 (3 deaths)	* 0.3	0 25 (2 deaths)	* 0.4	1 29 (3 deaths)	* 0.4	1 24 (4 deaths)	* 0.4	0 24 (1 death)	* 0.4
Salmonellosis Spokane County Washington State	30 627 (3 deaths)	6.8 9.8	37 758 (2 deaths)	8.2 11.7	39 846 (3 deaths)	8.5 12.8	41 820 (2 deaths)	8.8 12.3	46 780 (3 deaths)	9.8 11.6
Shigellosis Spokane County Washington State	3 170	* 2.7	2 159	* 2.5	4 116	* 1.8	4 153	* 2.3	3 112	* 1.7

<sup>\*</sup>Incidence rates not calculated for <5 cases.

### **VACCINE-PREVENTABLE DISEASE**

During 2006-2010, 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. 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; 2010 saw the highest rate of pertussis statewide since 2005. The reported incidence of pertussis varies greatly by county- the rate of disease ranged from 0 to 103 per 100,000. Six Washington counties had outbreaks in 2010. Nationally, the incidence of reported pertussis (5.54/100,000) is considerably lower than the 2004 peak of 8.9/100,000, but incidence has continued to rise each year since and is higher than the rates seen in the 1990s.

With an overall rate of 9.0/100,000 population in Washington, the highest rates of and the most serious illness caused by pertussis occurs in children under the age

of one -106/100,000, as compared to the second most impacted group, children 1 through 4 years of age for whom the rate is 30/100,000. In 2010, 94 infants developed pertussis. Thirty-five infants less than 3 months of age were hospitalized due to pertussis and two died. Nationally, persons 10 years of age and over accounted for 50% of all reported cases in 2009.

In 2010, ten cases of Haemophilus influenza disease in children under 5 years were reported with one death in Washington. Nine of the 10 cases were hospitalized with six requiring intensive care. Unimmunized or under-immunized infants and children are at risk for H. flu, especially when they are taken into crowded settings.

Measles was declared eliminated from the United States in 2000. Since then, elimination has been maintained through high population immunity. Nonetheless, because measles remains endemic in much of the world; importations continue to result in sporadic cases and outbreaks in the United States, which can be costly to

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 2009, coverage with meningococcal conjugate vaccine was 53.6% among adolescents aged 13-17 years in the United States. In 2010, isolates from 29 of 31 Washington cases (93.5%) were submitted for determination of serogroup – 13 were serogroup Y (one fatal), 8 serogroup C (one fatal), 7 serogroup B, and 1 serogroup W135.

VACCINE-PREVENTABLE DISEASE		2006		200	) <b>7</b>	2008	2009		201	10
		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 disease^	Spokane County Washington State	0 5	* 1.2	0 6	* 1.4	0 * 2 *	0 9	* 2.0	0 10 (1 death)	* 2.2
Measles	Spokane County Washington State	0 1	*	0 3	*	0 * 19 0.3	0 1	*	0 1	*
Meningococcal Disease	Spokane County Washington State	3 45 (1 death)	* 0.7	3 32 (8 deaths)	* 0.5	8 1.7 40 0.6 (4 deaths)	4 26 (3 deaths)	* 0.4	2 33 (3 deaths)	* 0.5
Mumps	Spokane County Washington State	2 42	* 0.7	0 53	* 0.8	0 * 14 0.2	1 6	* 0.1	0 7	* 0.1
Pertussis	Spokane County Washington State	39 377 (1 death)	8.8 5.9	34 482	7.5 7.4	6 1.3 460 7.0 (1 death)	4 291	* 4.4	7 607 (2 deaths)	1.5 9.0

<sup>\*</sup>In persons aged <5 years old

## **HEPATITIS**

### **Hepatitis A**

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. The rate of acute hepatitis B in Spokane County is generally at least twice the state rate. The reason(s) for this disparity are unclear, but it is thought that Spokane County may have better case finding and reporting of acute hepatitis because rates of chronic hepatitis B are generally higher statewide than in Spokane County. 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. In 2010, 332 infants born to surface antigen positive women and 3 perinatal infections were reported.

From December 2000 through June 2010, 550 cases of chronic hepatitis B have been reported in Spokane County. Approximately 47% of the cases were diagnosed in persons aged 25-44.

### **Hepatitis C**

Because hepatitis C infection is frequently asymptomatic, acute disease is infrequently diagnosed. Typically less than 1% of reported cases are acute – and reported cases are significantly 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 400-500 cases usually reported to SRHD each year. Statewide, 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 coinfected 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		2006		200	2007		2008		2009		10
		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 Washington State	$52 \atop \text{(2 deaths)}$	1.1 0.8	3 60	* 0.9	2 51	* 0.8	1 42 (1 death)	* 0.6	0 21	* 0.3
Hepatitis B, Acute	Spokane County Washington State	19 80 (2 deaths)	4.3 1.3	21 72 (1 death)	2.7	8 56	1.7 0.9	10 48	2.2 0.7	12 50 (1 death)	2.6 0.7
Hepatitis B, Chronic	Spokane County Washington State	59 1,412	13.3 22.1	8 1,550	17.7 23.9	67 1,606	14.6 24.1		86 (thru 6/30/10) 1,274 (thru 6/30/10)		
Hepatitis C, Acute	Spokane County Washington State	5 23	1.1	2 18	* 0.3	5 25	1.1 0.4	7 22	1.5 0.3	4 25	* 0.4
Hepatitis C, Chronic	Spokane County Washington State	573 5,995		539 6,039	119.5 93.1	416 6,916	90.6 105.0		thru 6/30/10) (thru 6/30/10)		

<sup>\*</sup>Incidence rates not calculated for <5 cases.

NOTE: Chronic hepatitis B and C case numbers have been revised. These numbers represent all unduplicated cases first diagnosed in Spokane County.

### **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 a tick vector for Lyme has 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 Western Washington.) Tick-borne relapsing fever, however, occurs more frequently in Eastern and Central Washington, as well as Northern Idaho, than in Western 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 fifth largest number of cases (41) in the U.S.

The first locally acquired human

VECTOR-BORNE DISEASE &

I FGIONFI LOSIS

infections with West Nile virus (WNV) were reported in 2006. In 2009, Washington had the highest number of cases to date with 38 cases and two viremic blood donors. Of these cases, 36 were known to be endemically acquired within Washington. In 2010, no WNV cases were reported.

In recent years, 10-20 cases of travelassociated dengue fever and a few travelassociated Chikungunya cases have been reported annually in Washington. Rare reports of other travel-associated arboviral diseases have been reported, including Colorado tick fever and Japanese encephalitis in 2008, and St. Louis encephalitis and Toscana virus in 2009. Other than West Nile virus, the last reported human arboviral infection acquired in the state was western equine encephalitis in 1988. St. Louis encephalitis infections occurred in the distant past, primarily east of the Cascade Mountains.

Statewide in 2010, of 35 reported

2007

2008

2006

Legionellosis cases, 15 (43%) were admitted to intensive care units and 11 (31%) required ventilation. The median age was 61 years (range 28-89) and 26 (74%) 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, 31 (89%) were infected with *L. pneumophila* and 9 (26%) were travel-associated illnesses.

2009

1

5

2

29

(2 deaths)

0.1

0.4

2010

1

7

3

35

(4 deaths)

0.1

0.5

ELGIONELLOSIS		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 Washington State	1 13		0 16		0 20		2 54		0 24	
Hantavirus pulmonary syndrome	Spokane County Washington State	0 3	*	0 2	* *	0 2	*	0 3	* *	0 2	*
Lyme Disease (travel-related)	Spokane County Washington State	1 8	* 0.1	1 12	* 0.2	0 23	* 0.3	1 16	* 0.2	1 16	* 0.2
Malaria (travel-related)	Spokane County Washington State	() 43 (1 death)	* 0.7	1 30	* 0.5	4 32	* 0.5	0 26	* 0.4	2 39 (1 death)	* 0.6

5

9

1

24

1.1

0.1

1

4

1

19

(2 deaths)

0.3

Tick-borne

relapsing fever

Legionellosis

Spokane County

Washington State

Spokane County

Washington State

()

2

1

20

(1 death)

0.3

<sup>\*</sup> Incidence rates not calculated for <5 cases

including yellow fever, WNV disease, dengue, and Japanese encephalitis

## **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 as a chronic infection.

Consequently, in 1999 HIV infection also became reportable, allowing better assessment of the burden of disease. After an initial rise in HIV and AIDS case reports in 2000 and 2001 as a result of making HIV reportable, rates of incident disease stabilized statewide and locally in 2002-2010. The only exception was in 2007

when a greater number of tests were performed locally; positivity rates remained stable.

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.

Men who have sex with men (MSM) are the only risk group in which new HIV infections have been steadily increasing since the early 1990s. Like prevalent cases, newly diagnosed cases of HIV in Spokane County occurred primarily among non-Hispanic white MSM.

During 2002-2009, women represented approximately 19% of incident cases in Spokane County. Non-Hispanic blacks are disproportionately impacted by HIV disease in Spokane County, comprising less than 2% of the county's population, but representing 10% of those diagnosed with HIV infection in the same time period.

As of December 31, 2009, there were 415 individuals in Spokane County living with HIV disease, 60% of whom had a diagnosis of AIDS.

HIV/AIDS	HIV/AIDS		2006		2007		2008		2009		110
		Cases	Kate 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 Washington State	24 547 (94 deaths)	5.4 8.6	36 591 (95 deaths)	8.0 9.1	26 541 (86 deaths)	5.7 8.2	18 550 (100 deaths)	3.9 8.2	20 551 (60 deaths	4.3 8.2

<sup>\*</sup>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 accounted for more than 75% of all notifiable conditions reported to the Washington State Department of Health in 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, but not to the level reported prior to 2008. Small and large increases were probably due primarily to follow-up of local cases, as permitted by availability of funding. Spokane County had the fifth highest rate of chlamydial infection reported by county, and the rate is higher than that reported for the state as a whole. Of note, the rate of chlamydial infection in females 15-19 years old is catching up with the rate in females 20-24 years old; adolescents have been a focus of dedicated funds for STI follow-up and prevention activities.

In Washington state, chlamydial infection also continues to be the most commonly reported STI. The chlamydial infection incidence rate has been stable since 2008. Rates have generally increased since the middle of the last decade, but the rate of increase has slowed since 2004. The overall incidence rate for Washington was 318/100,000 as compared to the national incidence rate of 402/100,000. Females

between 15 and 24 years of age continue to have disproportionately higher incidence rates than other age groups or males. With dedicated funding provided by the legislature, more than 98% of cases have had treatment assured, and over 43% were provided partner management services, a significantly higher proportion than in previous years.

In 2010, a total of 1,307,893 chlamydial infections were reported to the CDC in 50 states and the District of Columbia. This case count corresponds to a rate of 426/100,000, which is an increase of 5.1% compared with the rate of 405.3/100,000 in 2009. During 1990–2010, the rate of reported chlamydial infection increased from 160.2 to 426.0 cases per 100,000 population. The reported number of chlamydia cases is higher among women, especially those 15-24 years of age, but this finding could be a reflection of screening recommendations. Racial differences also persist; rates among blacks continue to be substantially higher than rates among other racial/ethnic groups.

#### Gonorrhea

Locally, the rate of reported gonorrhea cases was stable in 2010 as compared to 2009; these rates represent a significant decrease from 2008. Statewide, the number and rate of cases increased by 25%, with the greatest incidence in urban areas. Increases were most notable in Puget Sound area males, many of whom report

MSM contact. The greatest incidence of gonorrhea is in the 20-24 age group, at 164/100,000 in males and 147/100,000 in females.

Nationally the rate of gonorrhea is at the lowest level ever recorded, but great disparities exist - the rate for blacks in 2009 was 20.5 times higher than that for whites.

### **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 (P) and secondary (S) syphilis are the infectious states of the disease. Locally, rates of syphilis are stable and the rate of P&S syphilis is much lower than the state rate. Only four cases were reported in 2010.

Statewide, there was a near doubling in the number of cases reported in 2010 compared with 2009. Of the 261 P&S syphilis cases reported, 81% resided in King County. There continues to be a large disparity between rates in males and rates in females, consistent with the pattern that has been observed since 1997. Cases occur primarily in MSM in urban areas. One case of congenital syphilis was reported in 2009 in Washington State.

Nationally in 2009, the rate of P&S syphilis increased for the eighth consecutive year, reaching the highest rate reported since 1995.

SEXUALLY TRANSMITTED INFECTION		20	2006		2007		2008		2009		10
		Cases	Rate per 100,000								
Chlamydia	Spokane County	1,121	252.6	1,258	278.8	1,593	347.1	1,637	352.0	1,617	343.8
	Washington State	17,819	279.5	19,123	295.0	20,882	317.0	21,178	317.6	21,401	317.8
Gonorrhea	Spokane County	120	27.0	206	45.7	250	54.5	131	28.2	137	29.1
	Washington State	4,231	66.4	3,646	56.2	3,069	46.6	2,268	34.0	2,865	42.6
Herpes	Spokane County	148	33.3	129	28.6	187	40.7	158	34.0	174	37.0
(initial infection)	Washington State	2,446	38.4	1,952	30.1	2,009	30.5	1,875	28.1	2,028	30.1
Syphilis, early infectious, <1 yr.	Spokane County	2	*	6	1.3	5	1.1	7	1.5	4	*
	Washington State	182	2.9	168	2.6	181	2.7	135	2.0	261	3.9

<sup>\*</sup>Incidence rates not calculated for <5 cases.

# **TUBERCULOSIS (TB)**

The crude incidence rate for tuberculosis (TB) is consistently lower in Spokane County than it is in Washington. During 2006-2010, 36 active TB cases were identified and/or treated in Spokane County. In 2010, four active cases of TB were reported. All four started treatment and nine completed treatment in 2010 (some had begun treatment in 2009). Twelve contacts of the four cases were identified and tested and none were positive for TB. An additional 110 individuals identified as having latent TB infection were seen initially through the SRHD clinic - ten refused treatment and 20 were referred to treatment in other locations. Ultimately, 87 persons completed treatment through SRHD.

Over the last decade, with the exception of 2007 and 2009, crude incidence rates of TB in Washington have steadily decreased to the current low rate of 3.5/100,000. As in past years, those

who are foreign-born as well as racial and ethnic minorities are at greatest risk for TB. Persons 25-44 years of age comprised about one-third of the cases. Of the 195 case specimens tested for drug susceptibility, just over 10% were resistant to isoniazid. Five (2.3%) specimens were multi-drug resistant (MDR) and two of those were resistant to all first-line drugs.

The incidence of TB in the United States dropped last year to its lowest level since 1953, but the nation still fell well short of a long-standing goal of eliminating the disease by 2010. The U.S. had a rate of 3.6/100,000 in 2010, a drop of almost 4% from 2009, in line with the average decline of 3.8% per year from 2000 to 2008. This was the lowest level since national reporting began in 1953 and more than 65% below the most recent peak in the early 1990s.

The nation had 11,181 TB cases in 2010. U.S.-born Americans accounted for

4,378 cases, a rate of 1.6/100,000. The number of cases among foreign-born Americans last year was 6,707, a rate of 18.3/100,000, 11 times higher than the rate in the U.S.-born persons.

Compared with the rate of TB in non-Hispanic whites, rates in Hispanics, non-Hispanic blacks, and Asians were, respectively, seven, eight, and 25 times as high. Among U.S.-born racial and ethnic groups, the greatest racial disparity in TB rates was for non-Hispanic blacks, whose rate was seven times greater than the rate for non-Hispanic whites. People with HIV continued to bear a sizable share of the burden of TB disease.

Nationally, there were 113 cases of MDR TB reported in 2009, and one case of extensively drug-resistant TB was reported for 2010.

TUBERCULOSIS		20	2006		2007		2008		2009		10
	E .	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 Washington State	10 262 (18 deaths)	2.3 4.1	5 291 (12 deaths)	1.1 4.5	8 228 (2 deaths)	1.7 3.5	9 256 (9 deaths)	1.9 3.8	4 236 (6 deaths)	* 3.5

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