Communicable Disease Report
2007-2011

For Healthcare Providers

Tacoma - Pierce County Health Department
Healthy People in Healthy Communities

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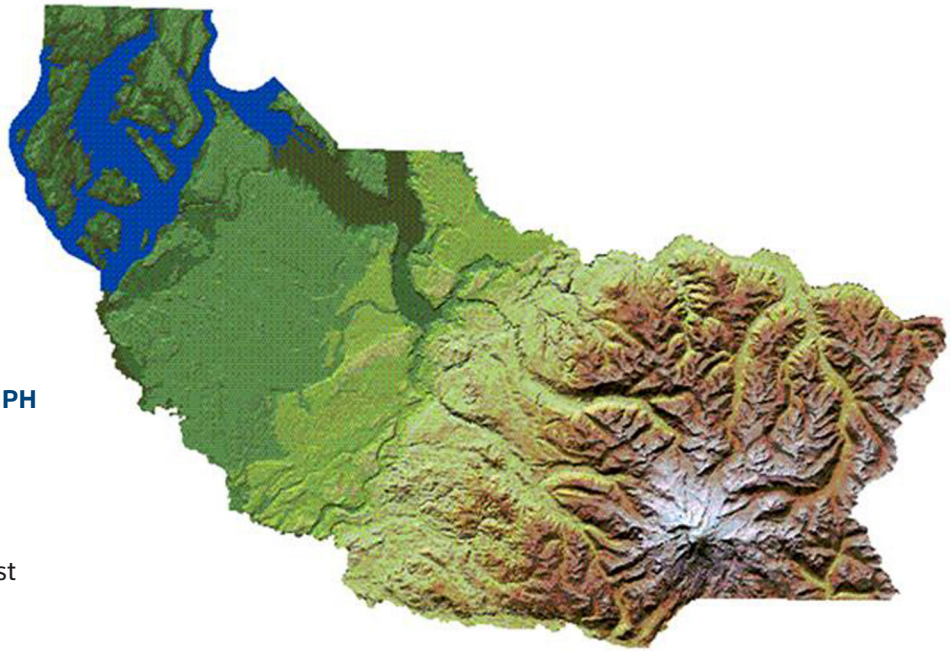
Introduction

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

Except for cryptosporidiosis, Pierce County's incidence for the enteric diseases listed below is lower than Washington State's. Cryptosporidiosis is characterized by fecal-oral transmission, and is often waterborne. A disproportionate number of Pierce County's cases occur on the Key Peninsula, including Gig Harbor.

Also noteworthy is the increase in *Campylobacter* cases, both in Pierce and other Washington counties. In part, this reflects increasing use of *Campylobacter* antigen tests, which are more sensitive than culture. However, due to occasional false positive *Campylobacter* antigen tests, we recommend using them only in patients with acute diarrheal illness.

Enterohemorrhagic *Escherichia coli* (EHEC) are now designated Shiga toxin-producing *E. coli* (STEC). If patients with acute gastroenteritis have bloody diarrhea, please ask the laboratory to test the stool specimen for Shiga toxin, in addition to other bacterial pathogens. This could lead to diagnosis of non-O157 STEC that produce illness similar to O157 STEC.

The total number of reported cases due to other enteric microorganisms from 2007 to 2011 were:

Vibriosis 18
Yersiniosis 8
Listeriosis 8

As with the four previous five-year periods, Pierce County's average annual incidence from 2007 to 2011 for vibriosis, yersiniosis and listeriosis did not exceed Washington State's.

Enteric Diseases		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
Campylobacter	Pierce County	69	8.7	75	9.3	79	9.7	103	13.0	132	16.5
	Washington	1,020	15.7	1,069	16.2	1,030	15.4	1,315	19.6	1,538	22.7
Cryptosporidia	Pierce County	21	2.7	13	1.6	17	2.1	32	4.0	39	4.9
	Washington	139	2.1	99	1.5	102	1.5	102	1.5	88	1.3
Giardia	Pierce County	53	6.7	25	3.1	31	3.9	37	4.7	42	5.2
	Washington	590	9.1	486	7.4	467	7.0	521	7.7	529	7.8
Salmonella (non-Typhoid)	Pierce County	85	10.8	78	9.7	78	9.6	71	8.9	53	6.6
	Washington	758	11.7	846	12.8	820	12.3	780	11.6	589	8.7
Shiga toxin-producing *E. coli*	Pierce County	14	1.8	15	1.9	11	1.4	11	1.4	22	2.7
	Washington	141	2.2	189	2.9	206	3.1	226	3.4	203	3.0
Shigella	Pierce County	14	1.8	5	0.6	8	1.0	7	0.9	2	nc
	Washington	159	2.5	116	1.8	153	2.3	112	1.7	104	1.5

Source: Washington State Communicable Disease Report 2011
nc = not calculated

Vaccine Preventable Diseases

Pertussis—Disease activity from 2005 to 2009 was at a very low level until pertussis cases began to increase in June 2010. Of 129 total cases in 2011, 12 (9.1%) were infants under age one, and 11 of these infants were under age six months. Three of these infants were exposed by their mothers and five were exposed by older siblings, emphasizing the importance of immunization for pregnant women and household contacts of infants. The vast majority of deaths from pertussis are infants under age three months. In 2011, two infants died of pertussis in Washington State (one in Yakima County and one in Snohomish County).

Most of the cases in 2011 were age 5 to 17. In the 5 to 17 age group 17.4% of cases for whom information is known were under-immunized.

Invasive Meningococcal—Only one case of meningococcal disease occurred in 2011 (the case was serogroup B which is not covered by the vaccine). The currently available vaccine protects against types A, C, Y and W-135. In 2011, the Centers for Disease Control and Prevention (CDC) Advisory Committee on Immunization Practices (ACIP) recommended a second dose of vaccine for adolescents after age 16.

Invasive meningococcal disease is immediately notifiable. Household and childcare contacts will need prophylaxis, coordinated by Tacoma-Pierce County 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, Mumps and Rubella—No cases of measles or rubella were reported in Pierce County from 2007 to 2011. Endemic measles and rubella have been eliminated from the United States; however, imported cases stemming from foreign travel do occur. In 2011, large outbreaks involving many thousands of cases of measles occurred in Europe; 17 outbreaks and 222 cases occurred in the United States as a result of unimmunized travelers. It is recommended that infants age 6 to 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.

Five cases of mumps were reported in Pierce County from 2007 to 2010 (none in 2011). In the past few years, large mumps outbreaks in the United States have occurred in college students and other student groups. Immunity to mumps from MMR vaccination is estimated to be 80 to 90%. Mumps outbreaks can occur in highly vaccinated populations because the 10% to 20% of people who have received two doses of MMR but are still susceptible can sustain an outbreak, especially in settings where people have a high number of close contact with others (e.g., school and college).

***Haemophilus influenzae* Invasive Disease**—Only cases under age five are reportable. In 2011, one case was reported, the serotype was A (not type B which is vaccine preventable). Invasive Hemophilus influenza type B (Hib) disease has all but disappeared because of 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.

Vaccine Preventable Diseases		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	Pierce County*	0	nc	0	nc	0	nc	0	nc	1	nc
	Washington**	6	1.4	2	nc	9	2.1	10	2.3	8	1.8
Measles	Pierce County	0	nc	0	nc	0	nc	0	nc	0	nc
	Washington	3	nc	19	0.3	1	nc	1	nc	4	0.1
Meningococcal	Pierce County	0	nc	3	nc	3	nc	3	nc	1	nc
	Washington	32	0.5	40	0.6	26	0.4	33	0.5	22	0.3
Mumps	Pierce County*	4	nc	0	nc	2	nc	3	nc	0	nc
	Washington	53	0.8	14	0.2	6	0.1	7	0.1	2	nc
Pertussis	Pierce County	23	2.9	33	4.1	29	3.6	84	10.6	129	16.1
	Washington	482	7.4	460	7.0	291	4.4	607	9.0	962	14.2

Source: Washington State Communicable Disease Report 2011
nc = not calculated

*Source: Public Health Issue Management System (PHIMS)
**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. The most common exposure for cases of acute hepatitis A is travel to areas of the world where the disease is common. 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.

Acute Hepatitis B—Due to widespread vaccination, incidence has declined dramatically. Acute hepatitis B often goes undiagnosed because it is frequently (50 to 70% of the time) asymptomatic. Hepatitis B can be transmitted by sexual contact, sharing injection equipment, needle sticks and from mother to infant during birth. It is estimated that every year, 1,000 babies in the United States contract hepatitis B from their mothers, despite the availability of effective post-exposure prophylaxis (hepatitis B immune globulin plus vaccine for the infant within 12 hours of birth). 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 testing at age one.

Chronic Hepatitis B—Most people in Pierce County with newly reported chronic hepatitis B infection are immigrants from endemic countries who most likely acquired the disease from perinatal or early childhood exposure. CDC recommends routine screening for HBsAg for people from countries where the prevalence of HBsAg positive is 2% or greater, which includes most countries in Asia, Africa, the Middle East, the Pacific Islands and Eastern Europe. Chronic hepatitis B carries up to a 25% chance of developing hepatocellular carcinoma or liver cirrhosis.

Chronic Hepatitis C—Is the leading cause of liver transplantation in the United States. It is transmitted through infected blood, most commonly 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 people with hepatitis C are unaware of their infection. Most people diagnosed with hepatitis C were born between 1945 and 1965. For this reason, CDC issued new recommendations in 2012 calling for one-time screening for all people in this age group. More effective medications have recently boosted treatment success rate to 75% or greater, so it is now more important than ever to identify hepatitis C infections.

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 (enteric transmission)	Pierce County	5	0.6	3	nc	5	0.6	2	nc	2	nc
	Washington	60	0.9	51	0.8	42	0.6	21	0.3	31	0.5
Hepatitis B, Acute (vaccine preventable)	Pierce County	11	1.4	6	0.7	9	1.1	2	nc	1	nc
	Washington	71	1.1	56	0.9	48	0.7	50	0.7	35	0.5
Hepatitis B, Chronic*	Pierce County	182	23.0	140	17.4	124	15.2	106	13.3	96	12.0
	Washington**										
Hepatitis C, Acute	Pierce County	3	nc	1	nc	1	nc	2	nc	1	nc
	Washington	18	0.3	25	0.4	22	0.3	25	0.4	41	0.6
Hepatitis C, Chronic*	Pierce County	1,160	146.7	1,226	152.2	884	108.7	731	91.9	741	92.4
	Washington**										

Source: Washington State Communicable Disease Report 2011
nc = not calculated
*Source: Washington State Department of Health, Epidemiology
**Some counties in Washington State do not report chronic hepatitis B and C; accurate statewide data are not available

Sexually Transmitted Diseases

Chlamydia—Remains the most commonly reported condition in both Pierce County and Washington State. In 2011, healthcare providers in Pierce County reported 4,159 cases of chlamydia. Pierce County has the highest rate of chlamydia infection in Washington State (518.5.3 per 100,000). Most of these infections are among those age 15 to 24 and most are asymptomatic. Screening sexually active young people age 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 2011, healthcare providers in Pierce County reported 424 cases of gonorrhea. Pierce County has the second highest rate of gonorrhea in Washington State (52.9 per 100,000) after Seattle (70.8 per 100,000). 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. In addition, fluoroquinolone-resistant gonorrhea has been identified in Pierce County and many strains of gonorrhea are less susceptible to cefixime and cefpodoxime. Therefore, the recommended treatment for uncomplicated gonococcal infections of the cervix, urethra, rectum and pharynx is the combination therapy of both Ceftriaxone (250 mg IM in a single dose) plus Azithromycin (1 g orally in a single dose). Someone presumptively diagnosed with gonorrhea should be treated at the time of their initial evaluation, before test results become available.

Syphilis (Primary and Secondary)—In 2011, Washington State and Pierce County experienced an increase of reported primary and secondary syphilis cases. Many of the syphilis cases have been in men who have sex with men (MSM) who also are 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. When a patient infected with HIV tests positive for syphilis (regardless of stage) the Health Department recommends that a lumbar puncture be considered to ensure appropriate treatment.

HIV/AIDS—In Pierce County, most of those infected with HIV are white men who have sex with men; however, there are heterosexual men and women also infected with HIV and 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		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	Pierce County	3,357	424.7	3,807	472.7	3,861	474.6	3,815	479.7	4,159	518.5
	Washington	19,123	294.7	21,327	323.7	21,178	317.6	21,401	317.8	23,237	343.3
Gonorrhea	Pierce County	830	105.0	676	83.9	457	56.2	414	52.1	424	52.9
	Washington	3,646	56.2	3,116	47.3	2,268	34.0	2,865	42.6	2,730	40.3
Herpes (genital, initial infection)	Pierce County	184	23.3	246	30.5	261	32.1	248	31.2	327	40.8
	Washington	1,952	30.1	2,009	30.5	1,875	28.1	2,028	30.2	2,149	31.8
Syphilis (primary and secondary)	Pierce County	19	2.4	19	2.4	9	1.1	9	1.1	27	3.4
	Washington	168	2.6	181	2.7	135	2.0	261	3.9	329	4.9
HIV Infection (new diagnosis)	Pierce County	66	8.3	64	7.9	62	7.6	63	7.9	75	9.3
	Washington	610	9.4	541	8.2	556	8.3	551	8.2	531	7.8

Source: Washington State Communicable Disease Report 2011

Tuberculosis

Among Pierce County's 116 tuberculosis (TB) cases from 2007 to 2011, 91 (78%) were born outside the United States. A case is contagious if there is pulmonary involvement, which was present in 94 (81%) of the 116 cases. During 2007 through 2011, sensitivity results were obtained for 81 *Mycobacterium tuberculosis* isolates. Of these, 16 (19.8%) were resistant to isoniazid. This percentage is about twice as high as isolates statewide, and primarily occurs as a result of Pierce County's relatively high proportion of Vietnamese and Filipino TB cases.

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	Pierce County	24	3.0	18	2.2	34	4.2	15	1.9	25	3.1
	Washington	291	4.5	228	3.5	228	3.8	336	3.5	200	3.0

Source: Washington State Communicable Disease Report 2011

Rabies Post-Exposure Prophylaxis

In 2011, animal bites considered low-risk for rabies exposure are no longer reportable. In Washington State, rabies is rarely identified in any animal except bats. Of bats tested in Washington, 5 to 10% are identified as rabid, though this represents a skewed population of sick or injured bats. We estimate that in the wild less than 1% of bats are rabid. Since 1987, only four rabid domestic, terrestrial animals were identified, two with bat variant virus.

Rabies post-exposure prophylaxis (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.

Rabies is still fairly common in some developing countries. Animal bites that occur during travel outside the United States should be evaluated for potential rabies risk.

In 2011, the PEP regimen changed from five doses of rabies vaccine to four doses for immune competent individuals.

	2007	2008	2009	2010	2011
Rabies Post-Exposure Prophylaxis	40	38	48	25	22

Miscellaneous Reportable Diseases

Dengue—All five reported Pierce County cases were acquired outside the continental United States.

Legionellosis—All 11 reported cases were hospitalized, and one died. Except for two, a couple who acquired their illness during travel in Mexico, the cases were unrelated. Three other cases were travel-related. Because travelers disperse, clinicians may not detect cases with the same travel-related exposure, e.g., a hotel shower or sauna. Please test for *Legionella* in community-acquired pneumonia cases who traveled in the two weeks prior to symptom onset.

Lyme Disease—Of the six reported cases, five were exposed during travel outside Washington State. One case had not traveled outside Pierce County. Two-tiered testing is recommended by the CDC; the algorithm is available at www.cdc.gov/lyme/diagnosistreatment/labtest/twostep.

Malaria—All 15 reported cases involved travel to Asia or Africa. Eight of the cases were due to *Plasmodium falciparum*, all of which were acquired in Africa.

Wound Botulism—The 2007 through 2011 incidence in Pierce County was three times higher than Washington State's. All five Pierce County cases were associated with heroin injection drug use.

Immediately contact Tacoma-Pierce County Health Department if you suspect 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 the Centers for Disease Control and Prevention to determine, based on clinical presentation, whether to release antitoxin for treatment.

		2007	2008	2009	2010	2011	2007–2011 Cases	2007–2011* Incidence
Dengue	Pierce County**	0	1	1	3	0	5	0.12
	Washington	10	14	11	19	9	63	0.19
Legionellosis	Pierce County**	2	1	2	2	4	11	0.27
	Washington	24	19	29	35	43	150	0.45
Lyme Disease	Pierce County**	0	2	1	2	1	6	0.15
	Washington	12	23	16	16	19	86	0.26
Malaria	Pierce County**	3	6	2	3	1	15	0.37
	Washington	30	32	26	39	24	151	0.45
Wound Botulism	Pierce County**	0	2	2	1	0	5	0.12
	Washington	2	2	4	1	4	13	0.04

Source: Washington State Department of Health
*Between 2007–2011, average annual incidence per 100,000
**Source: Tacoma-Pierce County Health Department, Communicable Disease Control

Rare Reportable Diseases, Pierce County (fewer than five cases)

	2007	2008	2009	2010	2011
Amebiasis	0	0	1	0	0
Coccidiomycosis*	0	0	0	0	3
Ehrlichiosis*	0	0	0	0	1
Histoplasmosis*	0	0	1	0	0
Leptospirosis	1	0	0	0	0

	2007	2008	2009	2010	2011
Melioidosis*	0	0	0	0	1
Relapsing Fever**	0	0	0	1	1
Tularemia***	0	0	0	0	1
Typhoid Fever	0	2	0	1	0

Source: Tacoma-Pierce County Health Department, Communicable Disease Control
NOTE: During 2007 through 2011, Pierce County had no cases of infant or foodborne botulism, brucellosis, hantavirus, plague, psittacosis, Q fever or West Nile Virus

*No cases acquired in Washington State
**Both cases had slept in cabins in eastern Washington
***See page 8 for case study

Miscellaneous Reportable Diseases (continued)

Tularemia Case Study

In September 2011, a 45-year-old woman visited the emergency department of a local hospital complaining of fever, headache, neck pain, cough and a tender mass in the right axilla. All initial studies were negative. A needle biopsy of the axillary mass was sent for culture and cytology. The patient was discharged home after a two-day stay in the hospital.

Ten days after discharge, the hospital laboratory notified Tacoma-Pierce County Health Department that a culture of material from the needle biopsy appeared to be growing *Francisella tularensis*. This is a slow-growing organism, and laboratory workers who may have examined the plates without first placing them under a biohazard hood may have been exposed to this potentially deadly bacterium. Four laboratory workers were exposed, and all completed prophylaxis with doxycycline and a 14-day symptom watch.

Tularemia is generally a disease of animals; rabbits and other rodents are especially susceptible and often die in large numbers during outbreaks. Humans can become infected through several routes, including tick and deer fly bites, skin contact with infected animals, drinking contaminated water, laboratory exposure or inhalation of infectious particles. Many people with pneumonic tularemia have been exposed by running over rabbits with a lawnmower. The symptoms of tularemia vary depending on how the bacteria enter the body and can manifest as a fever with skin ulcers, glandular disease or pneumonia.

Health Department staff coordinated with the hospital infection control nurse to have the emergency room physician contact an infectious disease consultant with whom the patient was able to follow up. The patient was given a 21-day course of ciprofloxacin.

The interview yielded few clues regarding exposure. The patient's only outdoor activity was a daily two mile walk in a suburban city park. She reported having seen rabbits on her walks, but had never touched one or come close to one. Her son went mountain biking on the park trails and she helped him lift his bicycle into her truck, and could have been exposed to contaminated dirt on the bike.

Voluntarily Reportable Diseases

Since 2000, Pierce County has supported voluntary reporting of methicillin-resistant *Staphylococcus aureus* (MRSA) and Vancomycin-resistant enterococci (VRE) from all seven Pierce County hospitals and several long-term care facilities and outpatient clinics. The numbers in the tables represent first isolate per patient per year. A substantial majority of reported MRSA cases (84% in 2011) were skin and soft-tissue infections. The percentage of *S. aureus* isolates reported that are resistant to methicillin have been decreasing since 2009.

	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
MRSA	4,718	596.8	5,382	668.0	4,122	507.0	3,901	479.0	3,806	361.0
VRE	75	9.5	55	6.6	107	13.2	92	11.3	95	11.8

Percent of *Staphylococcus aureus* Isolates Resistant to Methicillin				
2007	**2008**	**2009**	**2010**	**2011**
54.0%	51.1%	48.7%	47.6%	44.6%