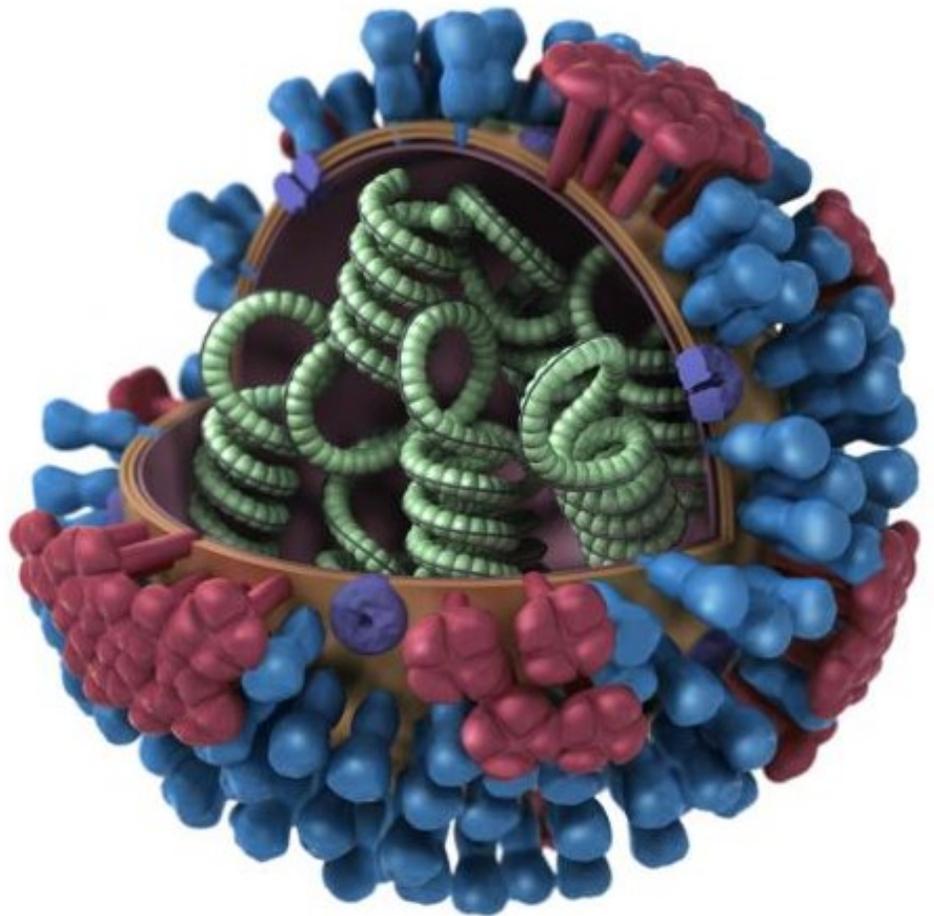


Clark County Public Health Communicable Disease Report, 2012



Communicable Disease Unit
Clark County Public Health



**Clark County Public Health Communicable Disease Annual Report
2012**

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Available online at:

<http://www.clark.wa.gov/public-health/reports/>

Published February 2014

Clark County Annual Disease Report 2012

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CLARK COUNTY
WASHINGTON

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Executive Summary – 2012

This report summarizes notifiable communicable diseases reported by Clark County health care professionals and laboratories to Clark County Public Health. Washington State requires healthcare providers and laboratories to report some diseases and conditions. These are known as “notifiable conditions”. The most common case reports continued to be sexually transmitted infections, infections caused by enteric pathogens, and pertussis.

Of note, in 2012 Washington saw the largest outbreak of pertussis in the last 50 years. Overall, 325 cases were reported in Clark County, an increase of 215% over last year’s count of 103 cases. This outbreak has been attributed to waning immunity in those who only received the acellular pertussis vaccine as well as decreasing immunization rates.

In addition to the statewide epidemic of pertussis and other national outbreaks, Clark County Public Health responded to numerous local outbreaks. In July, Clark County Public Health closed Klineline Pond following an investigation into a cluster of *Shigella sonnei*. In October, Clark County Public Health temporarily closed a local restaurant after over 120 patrons became sick with *Salmonella* Virchow.

Influenza activity during the 2012-2013 season was more severe than average and occurred earlier than usual. The dominant strain in the 2012-2013 season in Washington and nationally was H3N2 and the vaccine was well matched to circulating strains.

This report describes disease patterns, trends, and high risk populations in Clark County as a tool for future disease prevention efforts. It acts as a resource for the public, medical personnel, and public health authorities at county, state, and federal levels.

Introduction

Purpose

The Clark County communicable disease report was created to:

- Summarize annual morbidity from notifiable diseases reported in Clark County
- Describe disease patterns, trends, and high risk populations as a way to direct future disease prevention efforts
- Provide a resource to the public, and to medical and public health authorities at county, state, and federal levels

Report Format

This report is divided into 5 sections:

- Section 1: Summary of Notifiable Diseases and Conditions
- Section 2: Selected Notifiable Diseases and Conditions
- Section 3: Summary of Vaccines and Vaccination Rates
- Section 4: Notable Outbreaks and Investigations
- Section 5: 2012-2013 Influenza Summary

Data Sources

Data presented in this report is based upon reportable disease information received by county and state health department staff from physicians, hospitals and laboratories. Data was obtained through passive and sometimes active surveillance. Reporting notifiable diseases is required under Washington Statute WAC 246-101. This data would not be available without the cooperation of the extensive network of healthcare providers involving both private and public sector participants.

The Washington Department of Health (DOH) produces annual communicable disease reports similar to this one. The DOH report encompasses the entire state and occasionally reports county level data as well. Whenever possible, this report attempts to harmonize DOH and Clark County Public Health numbers by using the same case definitions. Where discrepancies exist, it is usually due to changes in case definition over time or updates to reported cases after the DOH report is published.

Interpreting the data

Key Terms and Abbreviations

Incidence and Prevalence: These two terms refer to the burden of disease in the community.

Incidence is the number of new cases in a population during a period of time and is usually expressed as a rate. For example, if in 2012, 100 people in a population of 100,000 people caught pertussis, the incidence rate of pertussis would be 100 cases per 100,000 people in 2012.

Prevalence is the number of cases that currently have disease in a population and is usually expressed as a percent. For example, if at this very moment 100 people in a population of 100,000 people are sick with pertussis, the prevalence of pertussis would be 0.1% (100/100,000).

Endemic and Epidemic: These two terms refer the current disease burden compared to the normal level of disease in a community. Endemic refers to disease being present at a historically usual level. For example, *Campylobacter* is endemic in Clark County. The disease is present in the county and is currently within historically normal levels.

Epidemic refers to disease being above a historically usual level. For example, Washington in 2012 declared a pertussis epidemic as it saw pertussis incidence rates at levels not seen since the 1950's. Many of the diseases and conditions on the notifiable conditions list have a very low or a usual level of zero cases, so very few cases can constitute an epidemic.

Transmission routes:

Transmission refers to how the disease-causing agent is spread and depends greatly on the specific disease. A method frequently mentioned in this report is the fecal-oral route, which is common in many foodborne, waterborne, and diarrheal diseases. By this method people are exposed to water, food, or an environment contaminated with feces which they then ingest. Salmonella, shigella, and campylobacter are commonly transmitted fecal-oral.

Other common transmission routes include airborne, sexual, bloodborne, and vector-borne routes. Airborne transmission occurs when disease is transmitted through the air by coughing, sneezing, talking, breathing, or through saliva. Pertussis, influenza, and tuberculosis are transmitted in this way. Sexual transmission refers to transmission of disease through sex. "Having sex" means anal, vaginal, or oral sex. Common sexually transmitted diseases include chlamydia, gonorrhea, and herpes simplex. Bloodborne diseases are transmitted when blood or bodily fluid enters another person's body. Common ways to transmit bloodborne disease are through contaminated needles or sharing injection drug use equipment. Hepatitis C is primarily transmitted by bloodborne transmission. Vector-borne diseases require the bite of a vector such as a mosquito, tick, or louse. Malaria and West Nile Virus are examples of vector-borne diseases.

Some diseases are spread by multiple transmission routes. For example, Hepatitis B can be bloodborne and sexually transmitted.

Epidemiology terms:

Exposure is the relevant item or behavior that puts a person in contact with a disease-causing agent. If a person ate raw shellfish on a certain day and then got sick, eating raw shellfish was their exposure. Related to the exposure is the reservoir. The reservoir for a particular disease is where the disease-causing agent can be found in nature. Some diseases such as shigella can only be found in humans while for West Nile Virus the primary reservoir is birds and humans are only incidentally infected.

Other terms refer to epidemiologically useful time periods. The incubation period is the amount of time it takes for someone to get sick after they are exposed. Communicability is the time period where a person is contagious, which may or may not coincide with when the person has symptoms. Often a person can be infected with a disease without having symptoms, epidemiologists refer to these cases as asymptomatic cases.

Immunocompromised, chronic conditions, and other special populations:

Certain populations are more at-risk than others depending on the disease. Immunocompromised persons and individuals with chronic conditions are common at-risk populations.

Typically, immunocompromised refers to those with immune systems that do not function normally due to HIV infection, medications for chronic conditions, malnutrition, or those with genetic disorders. Chronic conditions are those conditions that have a long-term negative effect on health such as diabetes, chronic obstructive pulmonary disease (COPD), asthma, and chronic liver, kidney, and heart disease.

In addition, some populations are more at risk because of behavioral or environmental risk factors

such as healthcare workers, MSM (men who have sex with men), travelers, specific occupations, and injection drug users.

Scientific Names

Many of the species that cause disease have scientific names similar to the name of the disease and diseases are often colloquially referred to by the name of the species causing disease. Scientific names of species are in italics and after the first usage are typically abbreviated. For example, pertussis (whooping cough) is caused by the organism *Bordetella pertussis*. Any mention of pertussis (no italics) refers to the disease not the organism and after the organism's full name is used once the organism will be abbreviated as *B.pertussis*.

Healthy People 2020 Goals

CDC uses Health People 2020 Goals as benchmarks for some notifiable conditions. A collection of 10-year national health objectives, these goals were developed by the United States Department of Health and Human Services. They cover a broad range of health-related outcomes and in this report we focus on immunization and infectious disease goals. Healthy People 2020 goals are available online at:

<http://www.healthypeople.gov/2020/>

Limitations

This report should be interpreted in the light of several limitations:

Underreporting: The number of cases reported to the health department is in many cases not the total number of cases in the community. The less common, more severe diseases such as measles, botulism, anthrax, and tuberculosis are more completely reported than more common but (individually) less severe diseases such as campylobacter or giardia.

Small numbers problems: Some of the diseases in this report are exceedingly rare and we would not expect very many (or any) cases to occur within Clark County in a given year. Therefore when we do see small numbers of cases of these rare diseases, it is uncertain whether this is due to increased incidence or is due to random variability in a stable background rate. Wherever possible we publish incidence rates per year but with some rare diseases we aggregate years or report raw counts in order to combat small numbers problems.

Population Estimates: All countywide rates are based upon population estimates from the Washington State Office of Financial Management. All geographic, demographic, and sub-county population estimates are based upon Census estimates.

Incomplete case information: Certain analyses may not include all the reportable cases of a specific disease due to incomplete case information. For graphs showing month of illness onset, it is important to note that only those cases for which an onset date could be determined are included.

Confidentiality

Clark County Public Health strives to maintain the confidentiality of the people it serves while also balancing the interests of the public. In this document Clark County Public Health reports aggregate numbers for 2012 and for some diseases and conditions the aggregate number of cases is very small. Breakdowns by case characteristics are only provided when there are sufficient case numbers to be educational while preserving the confidentiality of cases.

Map of Clark County, Washington



Washington State and Clark County Population Estimates 2003-2012

Washington State Office of Financial Management

Table A: Clark County and Washington Population Estimates by Year, 2003-2012

Year	Clark County	Washington
2003	374,091	6,126,885
2004	385,370	6,208,515
2005	394,600	6,298,816
2006	404,737	6,420,258
2007	412,692	6,525,086
2008	419,091	6,608,245
2009	423,775	6,672,159
2010	425,363	6,724,540
2011	428,000	6,767,900
2012	431,250	6,817,770

Table B: Clark County Population Estimates by Gender and Age Group, 2012

Age Group	Male	Female	Total
0-4	14,179	13,611	27,790
5-9	15,610	14,871	30,481
10-14	16,842	15,857	32,699
15-19	15,465	14,629	30,094
20-24	13,193	13,094	26,287
25-29	12,989	13,183	26,172
30-34	13,942	14,568	28,510
35-39	14,032	14,403	28,436
40-44	15,619	15,409	31,028
45-49	14,947	15,326	30,274
50-54	15,440	15,733	31,173
55-59	14,135	15,069	29,203
60-64	12,326	13,380	25,707
65-69	9,273	10,015	19,288
70-74	6,142	6,495	12,637
75-79	3,837	4,575	8,412
80-84	2,646	3,624	6,270
85 +	2,300	4,489	6,789
Total	212,917	218,333	431,250

Table C: Clark County Population by Race, 2010

Race	Population
White	390,303
Black	8,819
American Indian / Alaska	4,298
Asian / Pacific Islander	20,318
Multiple Races	11,863
Total	425,363

Table D: Clark County Population by Ethnicity, 2010

Ethnicity	Population
Non-Hispanic	407,825
Hispanic	24,345
Total	425,363

Section 1: Summary of Notifiable Diseases and Conditions

List of Reportable Disease and Conditions in Washington, 2012

In Washington State, health care providers, health care facilities, laboratories, veterinarians, food service establishments, child day care facilities, and schools are legally required to notify public health authorities at their local health jurisdiction of suspected or confirmed cases of selected diseases or conditions. These are referred to as notifiable conditions.

Anaplasmosis	Meningococcal Disease
Anthrax	Monkeypox
Arboviral Diseases	Mumps
Babesiosis	Pertussis
Birth Defects	Pesticide Poisoning
Botulism	Plague
Brucellosis	Poliomyelitis
<i>Burkholderia</i> infection (Meliodosis or Glanders)	Prion Diseases, human
Campylobacteriosis	Psittacosis
Chagas Disease	Q Fever
Chancroid	Rabies, Human
Chlamydia	Rabies, Suspected Human Exposure
Cholera	Relapsing Fever
Coccidioidomycosis	Rubella
Creutzfeldt-Jakob disease (CJD)	Salmonellosis
<i>Cryptococcus gatti</i>	SARS
Cryptosporidiosis	Shellfish Poisoning, Paralytic or Domoic Acid
Cyclosporiasis	Shiga toxin producing <i>E.coli</i>
Diphtheria	Shigellosis
Ehrlichiosis	Smallpox
Giardiasis	Spotted Fever Rickettsioses
Gonorrhea	Syphilis
Granuloma inguinale	Tetanus
Gunshot wounds	Tick Paralysis
Haemophilus Influenzae (Hib)	Trichinosis
Hantavirus Pulmonary Syndrome	Tuberculosis (TB)
Hemolytic Uremic Syndrome (HUS)	Tularemia
Hepatitis A, acute	Typhoid fever
Hepatitis B, acute, perinatal, and chronic	Typhus
Hepatitis C, acute and chronic	Vaccinia
Hepatitis D, acute	Varicella Death
Hepatitis E, acute	Vibriosis
Herpes, genital	Viral Hemorrhagic Fevers
Human Immunodeficiency Virus (HIV / AIDS)	West Nile Virus
Immunization reactions (severe, adverse)	Yellow Fever
Influenza, deaths and novel strains	Yersinosis
Lead, child blood	
Legionellosis	Disease of suspected bioterrorism origin
Leptospirosis	Unexplained critical illness or death
Listeriosis	Highly Antibiotic Resistant Organisms, including
Lyme Disease	Vancomycin Resistant <i>S.aureus</i> (VRSA) and
Lymphogranuloma	multi-drug resistant <i>S.aureus</i> (MRSA)
Malaria	Other rare diseases or conditions of public health
Measles	significance

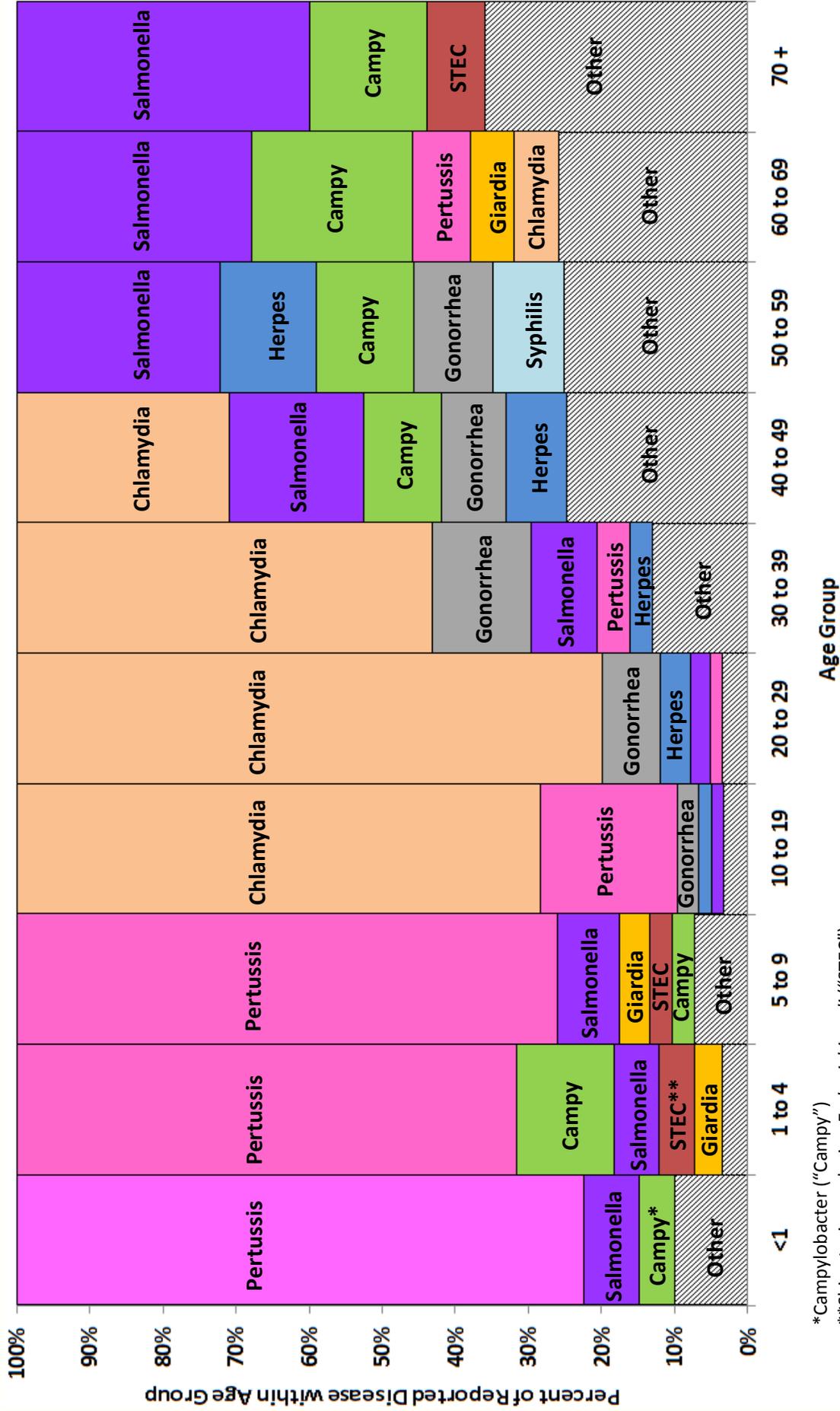
Table 1.1 Reported Confirmed and Probable Cases for Selected Notifiable Diseases, Clark County 2003-2012

Selected Notifiable Diseases	Year										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Campylobacteriosis	67	74	57	57	70	55	74	110	118	82	
Chlamydia	825	894	902	855	887	1058	1315	1347	1490	1388	
Cryptosporidiosis	7	6	7	5	17	2	19	13	9	13	
<i>E.coli</i> (STEC)	13	21	30	14	9	8	25	34	12	27	
Giardiasis	26	40	31	26	33	35	40	56	49	29	
Gonorrhea	158	184	196	148	160	160	124	169	159	151	
Hepatitis A, acute	3	10	7	1	3	6	1	1	0	1	
Hepatitis B, acute	2	6	13	6	1	3	1	3	3	0	
Hepatitis C, acute	0	0	0	1	0	1	0	3	1	2	
Herpes Simplex	42	42	73	40	43	84	87	85	67	91	
HIV	25	25	26	20	41	17	20	31	28	20	
Legionellosis	3	1	4	4	5	4	4	5	3	2	
Listeriosis	1	1	0	1	1	2	1	0	0	3	
Lyme Disease	2	1	1	0	1	1	1	2	1	2	
Malaria	3	0	2	0	1	0	2	3	1	0	
Measles	0	0	0	0	0	0	0	0	3	0	
Meningococcal	5	3	6	6	5	4	3	4	1	0	
Mumps	0	0	0	0	7	0	0	1	0	0	
Pertussis	38	21	61	22	26	29	18	93	95	326	
Salmonellosis	39	36	40	52	43	45	98	63	50	156	
Shigellosis	5	10	10	6	8	4	5	7	12	14	
Syphilis	14	4	12	9	3	3	13	13	11	43	
Tuberculosis	10	8	9	8	7	7	16	22	10	7	
<i>Vibrio</i> infections	0	2	2	3	0	1	1	3	1	2	
West Nile Virus	0	0	0	1	0	0	0	0	0	1	

Table 1.2 Reported Confirmed and Probable Cases of Notifiable Disease of Infrequent Occurrence, 2003-2012

Notifiable Disease	Year										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	
Anaplasmosis	0	0	0	0	0	0	0	0	0	0	
Anthrax	0	0	0	0	0	0	0	0	0	0	
Arboviral Disease	0	0	0	0	0	0	0	0	0	0	
Babesiosis	0	0	0	0	0	0	0	0	0	0	
Botulism, Foodborne	0	0	0	0	1	0	0	0	0	0	
Botulism, Infant	0	0	0	0	0	0	0	0	0	0	
Botulism, Wound	0	0	0	0	0	0	0	0	0	0	
Brucellosis	0	0	0	0	0	0	0	0	0	0	
Burkholderia infection (Meliodosis or Glanders)	0	0	0	0	0	0	0	0	0	0	
Chagas Disease	0	0	0	0	0	0	0	0	0	0	
Chancroid	0	0	0	0	0	0	0	0	0	0	
Coccidioidomycosis	0	0	0	0	0	1	1	1	0	1	
Cryptococcus gatti	0	0	0	0	0	0	0	1	0	1	
Cyclosporiasis	0	0	0	0	0	0	0	0	0	0	
Diphtheria	0	0	0	0	0	0	0	0	0	0	
Ehrlichiosis	0	0	0	0	0	0	0	0	0	0	
Granuloma inguinale	0	0	0	0	0	0	0	0	0	0	
Haemophilus influenzae (Hib)	1	0	1	1	0	0	0	3	0	1	
Hantavirus Pulmonary Syndrome	0	0	0	0	0	0	0	0	0	0	
Hepatitis D or E	0	1	0	0	0	0	0	0	0	0	
Hemolytic Uremic Syndrome (HUS)	0	1	0	0	0	0	0	0	0	0	
Influenza, deaths and novel strains	0	0	0	0	0	0	152	0	2	0	
Leptospirosis	0	0	1	0	2	0	0	0	0	0	
Lymphogranuloma	0	0	0	0	0	0	0	0	0	0	
Monkeypox	0	0	0	0	0	0	0	0	0	0	
Plague	0	0	0	0	0	0	0	0	0	0	
Prion Diseases, human	0	0	0	0	0	0	0	0	0	1	
Psittacosis	0	0	0	0	0	0	0	0	0	0	
Q Fever	0	0	0	0	0	0	0	1	0	0	
Relapsing Fever	0	1	0	0	0	0	0	0	0	0	
Rubella	0	0	0	0	0	0	0	0	0	0	
Shellfish Poisoning, Paralytic or Domoic Acid	0	0	0	0	0	0	0	0	0	0	
Spotted Fever Rickettsioses	0	0	0	0	0	0	0	0	0	0	
Tetanus	0	0	0	0	0	0	0	0	0	0	
Thyphus	0	0	0	0	0	0	0	0	0	0	
Tick Paralysis	0	0	0	0	0	0	0	0	0	0	
Trichinosis	0	0	0	0	0	0	0	0	0	0	
Tularemia	0	1	3	0	0	1	0	0	0	1	
Typhoid fever	1	0	0	1	0	1	0	0	0	0	
Vaccinia	0	0	0	0	0	0	0	0	0	0	
Varicella Death	0	0	0	0	0	0	0	0	0	0	
Yellow Fever	0	0	0	0	0	0	0	0	0	0	
Yersiniosis	0	1	0	3	2	2	1	1	1	0	

Table 1.3: Most Common Reportable Diseases by Age Group and Percent of Reported Disease, Clark County 2012



*Campylobacter ("Campy")
 **Shiga toxin producing *Escherichia coli* ("STEC")

Table 1.4 Healthy People 2020 goals related to infectious disease

Disease	Goal	Population
Campylobacter	8.5 cases per 100,000	General Population
Chlamydia	Reduce rates	Women 15-44
E.coli	0.6 cases per 100,000	General Population
Gonorrhea	257 cases per 100,000	Women 15-44
	198 cases per 100,000	Men 15-44
Hepatitis A	0.3 cases per 100,000	General Population
Hepatitis B	0 new cases in children	Children aged 2-18
	400 perinatal cases	Infants
	1.5 cases per 100,000	Adults 19 and older
Hepatitis C	0.2 cases per 100,000	General Population
Hib	0.27 per 100,000	Children <5
Listeria	0.2 cases per 100,000	General Population
Measles	30 US-acquired cases	General Population
Meningococcal Disease	0.3 cases per 100,000	General Population
Mumps	500 US-acquired cases	General Population
Pertussis	2,500 cases in children <1 year old	Children <1
	2,000 cases in adolescents aged 11-18	Adolescents aged 11-18
Pneumococcal Disease	12 cases per 100,000 under age 5	Children <5
	31 cases per 100,000 over age 65	Adults 65+
Polio	0 US-acquired cases	General Population
Rubella	0 Congenital Rubella Syndrome	Infants
	10 US-acquired cases	General Population
Salmonella	11.4 cases per 100,000	General Population
Syphilis	1.4 new cases per 100,000 women	Women
	6.8 new cases per 100,000 men	Men
	9.1 cases per 100,000 live births	Newborns
Tuberculosis	1.0 cases per 100,000	General Population
Varicella	100,000 cases	Children <18
Vibrio Infections	0.2 cases per 100,000	General Population
Yersinia	0.3 cases per 100,000	General Population

Table 1.5: Selected Notifiable Disease Summary Table

Disease	Most Recent Clark County Figure (per 100,000)	Change over time in Clark County	Clark County vs. WA State	Clark County vs. Healthy People 2020 Incidence Goals	Special Populations Affected	
					Age Group	Other Special Populations
Campylobacter	19.0	Flat	Near	Above	Elderly, Children	
Chlamydia	322.0	Up	Near	Above	Young adults	
Cryptosporidium	3.0	***	Above	-		Immunocompromised
<i>E. coli</i> (STEC)	6.3	***	Above	Above	Children	
Giardia	6.7	Flat	Near	-	Elderly, Children	Immunocompromised
Gonorrhea	39.6 (Male)* 76.3 (Female)*	Flat	Near	Below	Young adults	
Hepatitis A, acute [®]	0.4	Down	Near	Near	Adolescents, Adults	
Hepatitis B, acute [®]	0.7	Down	Near	Below	Infants, Children	Healthcare workers, MSM, injection drug users, prisoners, dialysis patients
Hepatitis C, acute [®]	0.3	***	***	Above		Injection drug users
Herpes Simplex, genital	21.1	Flat	Below	-	Young adults	Infants, Neonates
Human Immunodeficiency Virus (HIV)	4.6	Flat	Below	Below		IV drug users, MSM, those with multiple sex partners
Legionella [®]	0.8	Flat	Above	-	Elderly	Immunocompromised
Listeria [®]	0.3	***	***	Near	Neonates, Elderly	Immunocompromised, pregnant women, those with diabetes
Lyme Disease [®]	0.5	Flat	Above	-		
Malaria [®]	0.3	Flat	***	-		Travelers to endemic areas
Measles [®]	0.1	***	***	Above	Very young children	Travelers to endemic areas
Meningococcal [®]	0.5	Down	Above	Near	Infants, Children	Immunocompromised, travelers to endemic areas, those living in crowded conditions
Mumps [®]	0.1	***	***	Above	Young Children, Adolescents	
Pertussis	75.6	Up	Near	Above	Infants	
Salmonella	36.2	Up	Above	Above		Immunocompromised, malnourishment, chronic conditions
Shigella	3.2	Flat	Near	-	Infants, Children	
Syphilis [®]	3.4 (Male)** 0.3 (Female)**	Up	Near	Below		HIV co-infected, MSM
Tuberculosis [®]	2.9	***	Below	Above		HIV co-infected, those with diabetes
<i>Vibrio</i> infections [®]	0.4	Flat	Below	Above	Middle aged	Immunocompromised, those with chronic liver disease
West Nile Virus [®]	0.1	***	***	-	Elderly	

*Among males/females aged 15-44

**Among all males or females

*** Unstable due to low numbers and sporadic outbreaks

[®] 5 Year Average

Section 2: Selected Notifiable Conditions

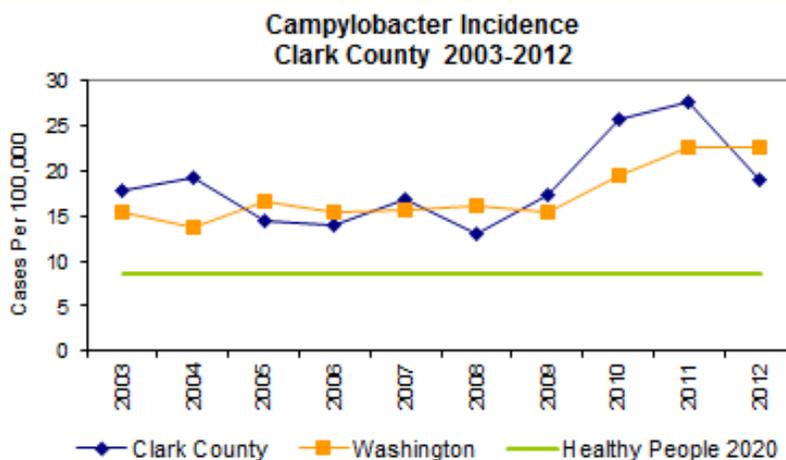
List of Selected Notifiable Diseases and Conditions

Campylobacteriosis
Chlamydia
Cryptosporidiosis
E.coli (STEC)
Giardiasis
Gonorrhea
Hepatitis A, acute
Hepatitis B, acute
Hepatitis C, acute
Herpes Simplex, genital
Human Immunodeficiency Virus (HIV)
Legionellosis
Listeriosis
Lyme Disease
Malaria
Measles
Meningococcal
Mumps
Pertussis
Salmonellosis
Shigellosis
Syphilis
Tuberculosis
Vibrio infections
West Nile Virus

Campylobacteriosis

Key Information:

- **Campylobacteriosis is a common diarrheal disease in Clark County, usually linked to contaminated food or water**
- **Most cases occur in the elderly and during summer months**
- **Prevention strategies include proper hand washing, and avoiding unpasteurized foods**
- **Clark County incidence is **above** Healthy People 2020 goals**



Campylobacteriosis is a bacterial gastroenteritis caused by gram negative bacterium of the genus *Campylobacter*, most commonly *C.jejuni*. Reservoirs of infection include the gastrointestinal tract of wild and domestic animals. Transmission of the bacteria can occur by consumption of contaminated food or water. Some examples include undercooked meat, especially poultry, unpasteurized milk, or infected water. Direct person-to-person transmission is uncommon. The incubation period is usually 2 to 5 days but can be longer. Symptoms include watery or bloody diarrhea, abdominal pain, fever, and nausea. Most cases recover without any specific treatment other than fluids replacement. Antibiotics are only indicated for severe infections.

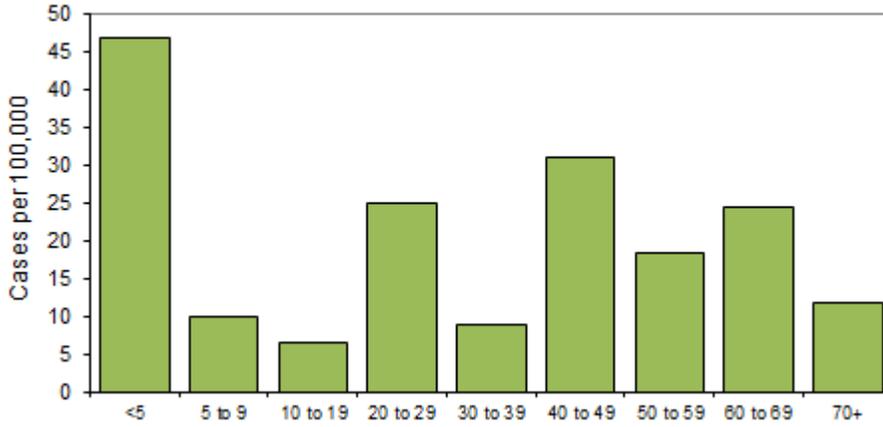
Prevention strategies include careful hand-washing after contact with animals (especially kittens, puppies and calves), proper food handling, drinking treated water, avoiding raw or undercooked poultry, thoroughly cooking all poultry products to a minimum internal temperature of 165 °F, and avoiding unpasteurized foods.

Campylobacter is historically the most commonly reported enteric pathogen in Washington and there were 82 cases of campylobacteriosis reported in Clark County in 2012. The incidence rate is near the historical average and is slightly

lower than the Washington state incidence rate. Nationally, the elderly have higher incidence rates, although in Clark County the very young had the highest incidence rate in 2012. Most cases occur during the summer months in Clark County likely due to increased exposure to recreational water.

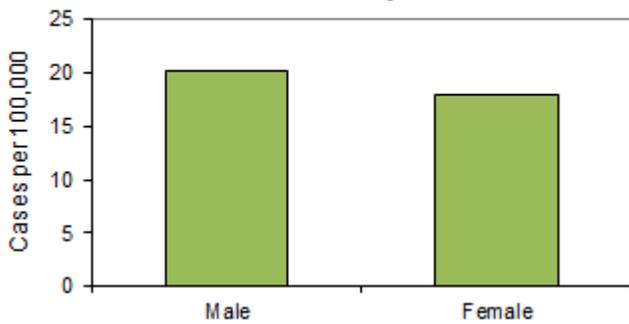
The Healthy People 2020 goal for campylobacter infections is an incidence rate of 8.5 cases per 100,000 population, below current levels in Clark County and in Washington.

**Campylobacter Incidence by Age Group
Clark County 2012**



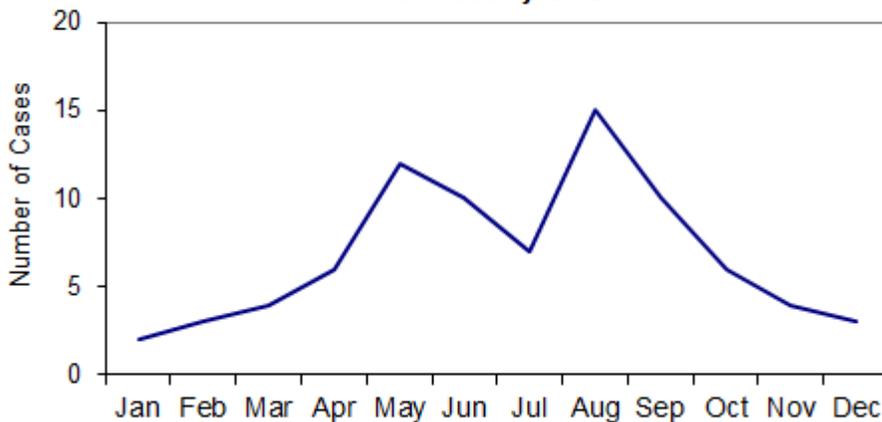
Nationally, the age group with the highest incidence are the elderly although in Clark County, the group with the highest incidence is young children.

**Campylobacter Incidence by Gender
Clark County 2012**



The campylobacter incidence rate in men is similar to the incidence rate in women.

**Campylobacter Cases by Month of Onset,
Clark County 2012**

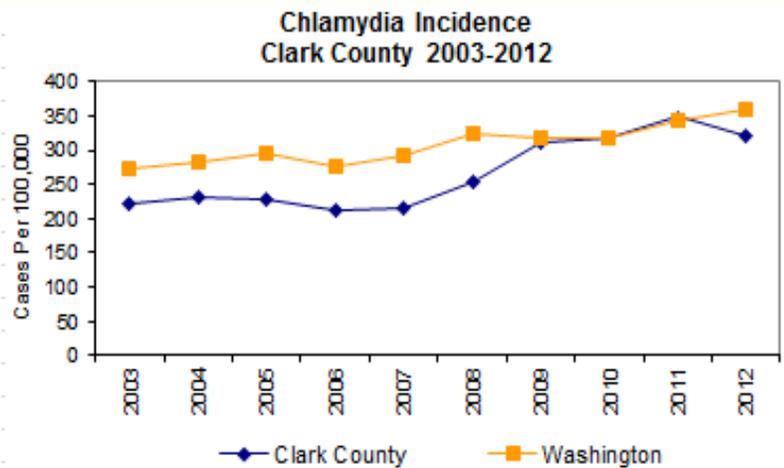


More cases of campylobacter are reported in the warmer months, likely due to increased recreational water exposure.

Chlamydia

Key Information

- Chlamydia is the most commonly reported sexually transmitted infection in Clark County
- Chlamydia is most often reported females less than 25 years old. Prevention measures include education and safe sexual practices. Women of reproductive age should be screened for Chlamydia
- In 2012, Clark County **did not** meet the Healthy People 2020 goal to reduce the rate of Chlamydia



Chlamydia is a bacterial infection caused by *Chlamydia trachomatis* and is the most commonly reported sexually transmitted disease in the United States. Humans are the natural reservoir, and infection is transmitted by sexual contact. Mother-to-baby infection can occur. The incubation period is not well defined, but can range from 7 to 14 days or longer. Chlamydia is communicable as long as the individual is infected and infection can last for months without proper treatment. Chlamydia is often (up to 70% of the time) asymptomatic, so under-reporting is common. In males, chlamydia can manifest as a urinary tract infection. Infertility is a complication in men. In females, complications include pelvic inflammatory disease (PID) which can increase the risk of infertility and ectopic pregnancy. Chlamydia can be treated with antibiotics.

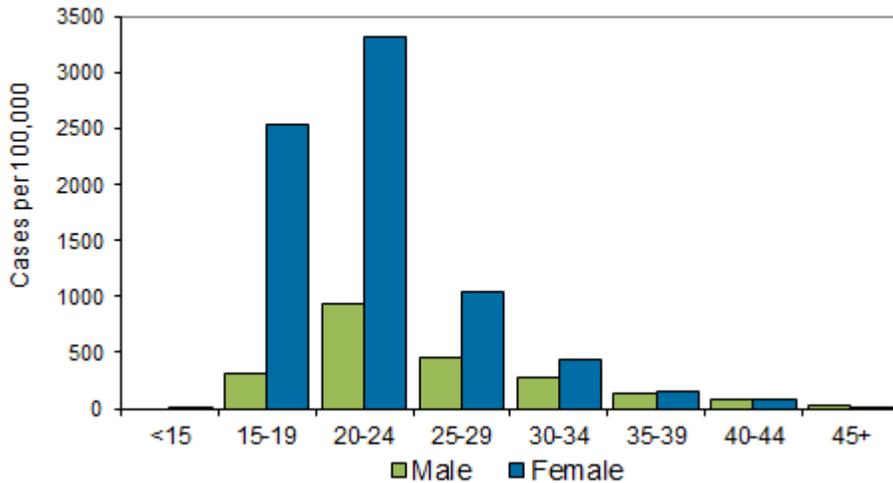
Prevention measures include health education and safe sexual practices. Routine screening for women is recommended to reduce the risk of PID and other pregnancy-related complications. Those with chlamydia should be screened for gonorrhea and HIV as chlamydia makes people more susceptible to other sexually transmitted infections. Co-infection with other sexually transmitted diseases is common.

There were 1,388 cases of chlamydia reported in Clark County in 2012. The incidence rate in 2012 is similar to the

past four years' incidence rate and is similar to Washington's incidence rate. The highest incidence rates were observed in young women and rates among females for all age groups were significantly higher than rates among males. Much of this gender difference is due to women seeking routine health services during their childbearing years rather than a true difference in disease burden.

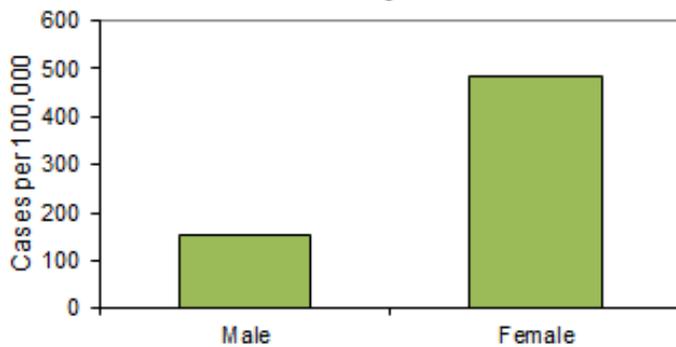
The Healthy People 2020 goal for chlamydia is to reduce rates of infections in women of childbearing age. The rate in Clark County and in Washington has been trending up in the last 10 years.

**Chlamydia Incidence by Age Group and Gender
Clark County 2012**



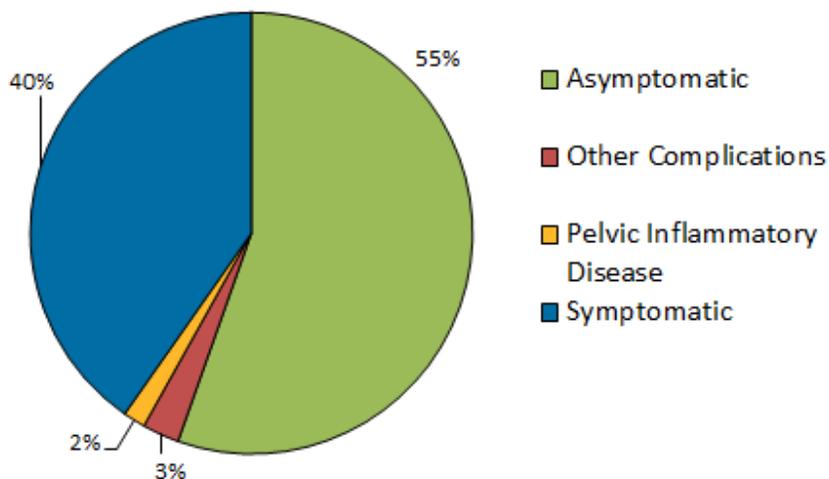
The most at-risk age groups for Chlamydia are young adults and women are more likely to be reported than men. This gender difference is apparent at every age group other than in adults aged 45+.

**Chlamydia Incidence by Gender
Clark County 2012**



Chlamydia is more commonly reported in women than in men. This difference is likely due to women seeking regular gynecological screening rather than a true difference in chlamydia rates.

**Female Chlamydia Infections by Symptoms
Clark County, 2012**

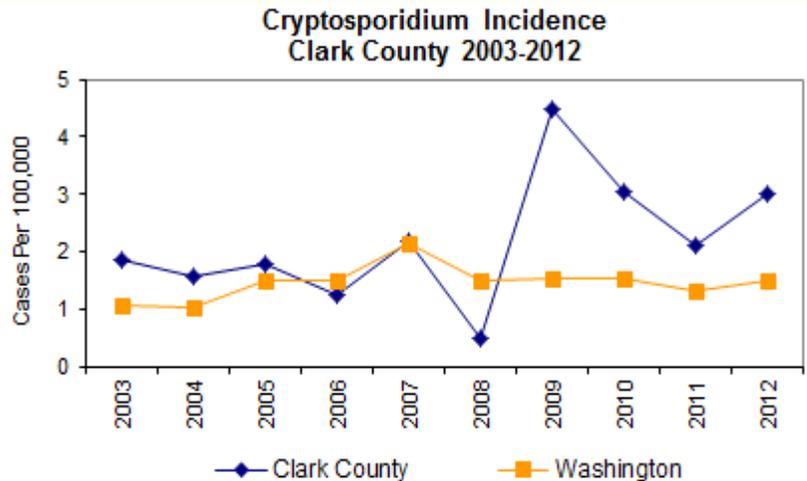


Most Chlamydia infections in women are asymptomatic (55%). However, about 5% of infections lead to pelvic inflammatory disease or other complications. The rate of symptomatic infections in men (61%) was higher than in women (45%).

Cryptosporidiosis

Key Information:

- **Cryptosporidium is an uncommon cause of diarrheal illness in Clark County**
- **Due to low numbers of cases, the incidence rate is unstable, although rates appear to be similar or slightly higher than the average for Washington.**
- **Preventive measures include good hand hygiene and washing after contact with animals, diapers, or recreational water**



Cryptosporidiosis is acute gastrointestinal illness caused by a single-celled parasite. Two parasites, *Cryptosporidium hominis* and *C. parvum*, infect humans. Cryptosporidia are commonly found in mammals, birds, and reptiles. The mode of transmission is fecal-oral and can be spread by ingesting contaminated food or water. In the United States, the parasite can be found in most surface water tested as it can persist in the environment for 2 to 6 months. Large waterborne outbreaks have been associated with contaminated drinking water, water parks, and recreational water. Cryptosporidium resist standard chemical disinfectants and may occur in municipal water systems, home filtered water, and bottled water.

The incubation period ranges from 1 to 12 days with symptoms including watery diarrhea, abdominal cramps, and low grade fever. Asymptomatic infections in animals and in humans are common and can be a source of infection. Parasites can be excreted with and without symptoms and cases can continue to be contagious many weeks after symptoms resolve. Infections are usually asymptomatic or self limiting, however among immunocompromised individuals infection can be long-lasting and life threatening.

Preventive measures include good hand-washing practices before handling and eating food, after contact with

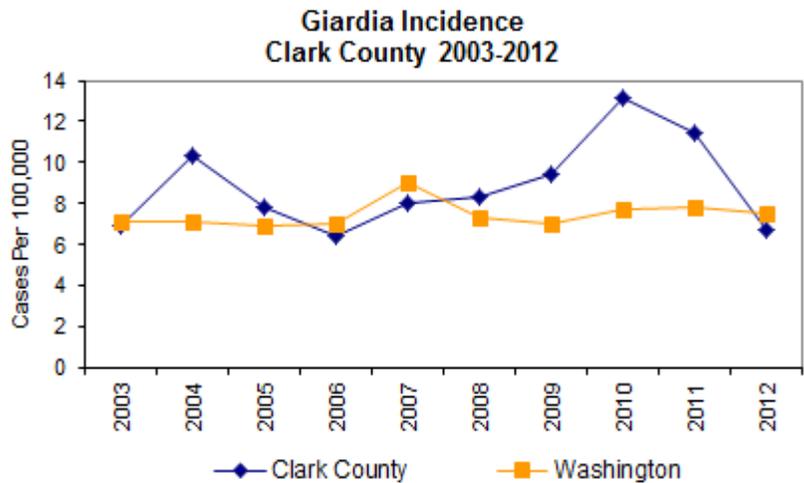
calves or other animals with diarrhea, and after diaper changes. Water in recreational settings, such as fountains, lakes, rivers, and swimming pools, should not be ingested. Contaminated drinking water should be boiled until proper water treatment is restored.

There were 13 cases of cryptosporidiosis reported in Clark County in 2012. Due to low absolute numbers of cases, the Clark County incidence rate appears volatile, but is consistent with a low, steady rate of infection within the county. The five year average incidence rate from 2007-2012 is higher than the Washington state incidence rate for the same time period. More cases tend to occur in young children and during the summer months likely due to increased use of recreational water. Exposures occurred both outside and within Clark County.

Giardiasis

Key Information:

- **Giardia is a common waterborne parasite**
- **The young, the old, and the immunocompromised are more at-risk for Giardia**
- **Giardia can be prevented by good hand hygiene, especially around small children, and not drinking from untreated water sources**
- **Clark County incidence rates are lower than the historical average and lower than Washington rates for 2012**



Giardiasis is a parasitic infection caused by the single celled organism *Giardia lamblia*. The parasite is passed in the stool of humans and many other animals and can survive outside the body for long periods of time. Transmission occurs by the transfer of infective cysts through the fecal-oral route. The most common exposures for giardia are untreated surface water, shallow well water, recreational water, or, less commonly, fecally contaminated food. In the United States the parasite can be found in most surface water tested. Person-to-person transmission can occur, with outbreaks reported in childcare facilities and among people that engage in oral-anal sexual contact. Outbreaks are often associated with ingestion of fecally contaminated drinking water or recreational water.

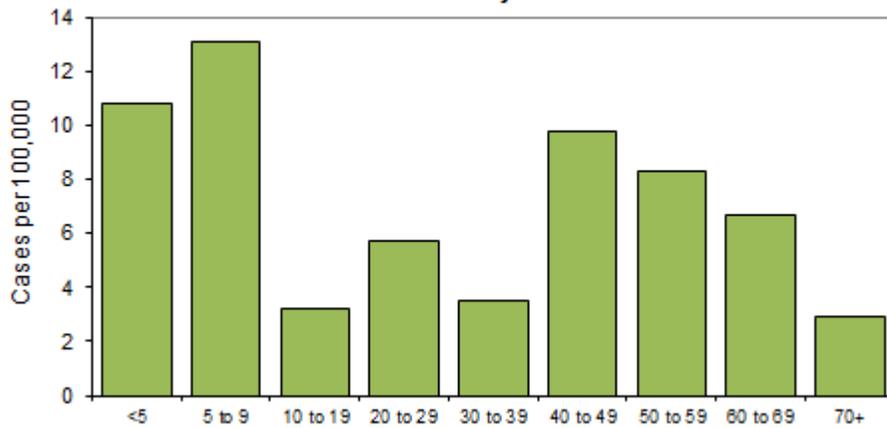
The incubation period ranges from 3 to 25 days. The disease remains communicable for the entire period of infection and cases may be contagious for several months after symptoms subside. Symptoms include diarrhea, abdominal pain, fatigue, and weight loss, though asymptomatic infection is also common. Severe giardiasis is often experienced by the immunocompromised. Giardia can be treated with anti-protazoal drugs.

Giardiasis can be prevented by practicing good hygiene, especially after toilet use, before handling food and eating,

and after surface water exposure. Appropriate hygiene and sanitation practices, especially diapering practices, are essential in preventing childcare outbreaks. Ingesting recreational water from rivers and lakes should be avoided. Water from untreated sources can be boiled or filtered for safe drinking.

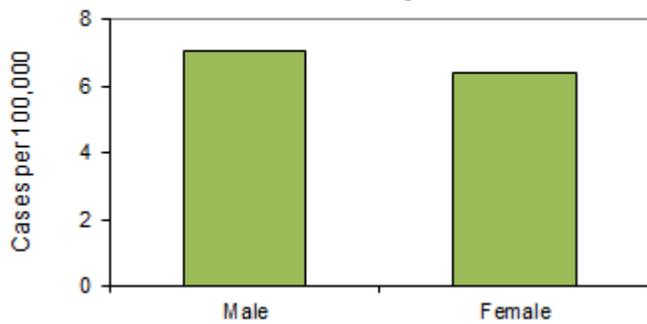
There were 29 cases of Giardiasis reported in Clark County in 2012. The incidence rate in 2012 was lower in comparison to the average incidence from 2007 to 2011, and was near the 2012 Washington state incidence rate. Children aged 5 to 9 years experienced the most disease. Historically, the incidence rate is highest during summer months and incidence among males is higher than females. Exposure occurred both outside and within Clark County.

**Giardia Incidence by Age Group
Clark County 2012**



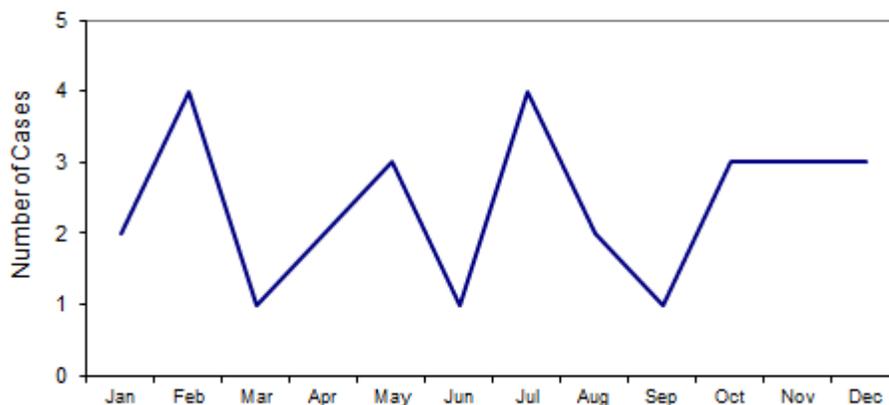
Giardia incidence is highest in young children aged 1-4 and 5-9. These age groups are disproportionately affected likely due to poor hygiene and ingesting untreated water.

**Giardia Incidence by Gender
Clark County 2012**



Historically, giardia is reported more often in males than in females. The rates in Clark County in 2012 were similar.

**Giardia Cases by Month of Onset
Clark County 2012**

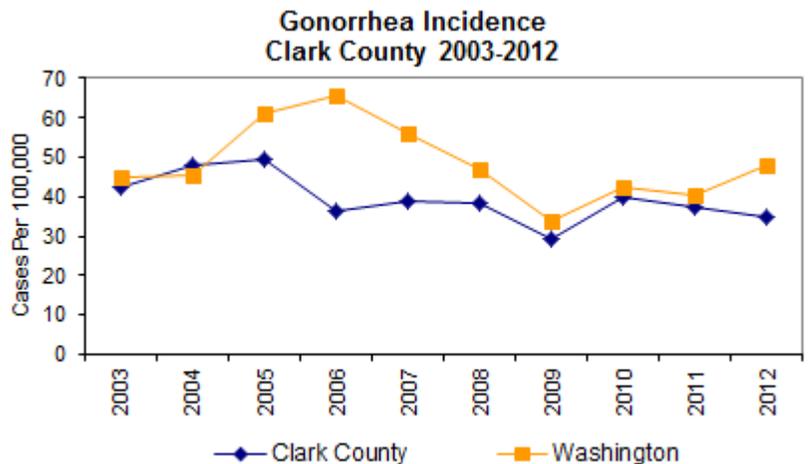


Historically, more cases of giardia are reported in the warmer months, likely due to increased recreational water exposure. However, in 2012 this seasonal pattern was not apparent.

Gonorrhea

Key Information:

- Gonorrhea is a sexually transmitted infection more common among people less than age 30
- Prevention measures include health education and safe sexual practices
- Routine screening is recommended for women of reproductive age
- Incidence rates for Clark County and for Washington are **below** Healthy People 2020 goals



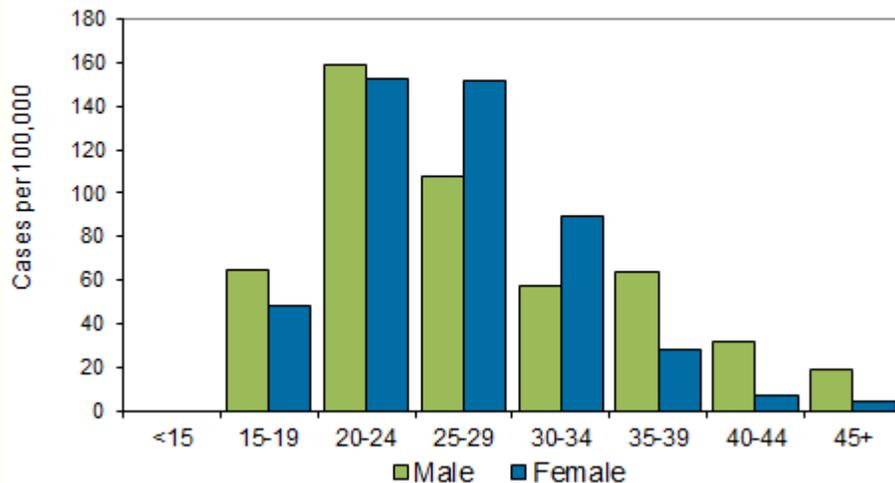
Gonorrhea is a sexually transmitted bacterial disease caused by the bacterium *Neisseria gonorrhoeae*. The bacteria is found only in humans and grows in warm moist areas of the reproductive tract, or in the mouth, throat, eyes, or anus. The incubation period ranges from 2 to 7 days, and infection is communicable until treated. About half of women and some men have no symptoms with infection. Symptoms in males include urethral discharge and painful urination. Infection in females is often asymptomatic, but can manifest as vaginal discharge. Infection can sometimes lead to pelvic inflammatory disease which increases risk of infertility and complications in pregnancy. Infection in the throat or anus can occur among those who have oral or anal sex. Co-infection with other sexually transmitted diseases is common. Gonorrhea can be treated with antibiotics, although antibiotic-resistant strains are emerging.

Prevention measures include health education and safe sexual practices. Routine screening for women is recommended to reduce the risk of pelvic inflammatory disease and other pregnancy-related complications. Those with gonorrhea should be screened for chlamydia and HIV as infection makes people more susceptible to other sexually transmitted infections and co-infection with other sexually transmitted diseases is common.

There were 151 cases of gonorrhea reported in Clark County in 2012. The incidence rate is estimated to be 35 cases per 100,000 population, with no significant increase or decrease compared to the previous 10 years. The incidence rate in Washington is 48.1 per 100,000, slightly higher than the rate in Clark County. The highest incidence rates were observed in the 20-24 year age group for both men and women. Men who have sex with men (MSM) appear to be at an elevated risk.

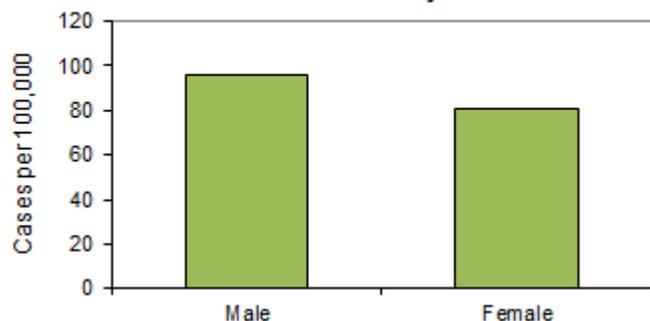
The Healthy People 2020 goals call for a national reduction in rates to 257 new cases per 100,000 population in women of childbearing age and 198 new cases per 100,000 population for men aged 15-44. Clark County rates are well below Healthy People 2020 goals (81 cases per 100,000 for women aged 15-44 and 96 cases per 100,000 for men aged 15-44).

**Gonorrhea Incidence by Age Group and Gender
Clark County 2012**



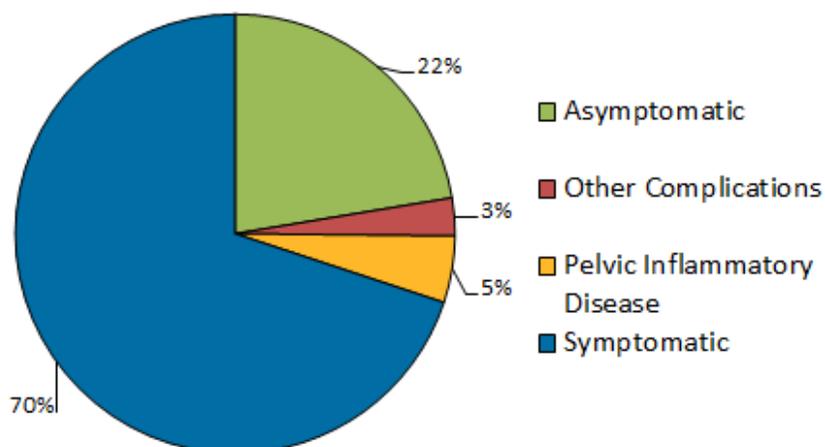
The most at-risk age groups for Gonorrhea are young adults. After age 35, men are more likely to be reported than women.

**Gonorrhea Incidence by Gender
Clark County 2012**



Overall, men and women reported at similar rates despite the difference in the age distribution.

**Gonorrhea Infections by Symptoms
Clark County, 2012**

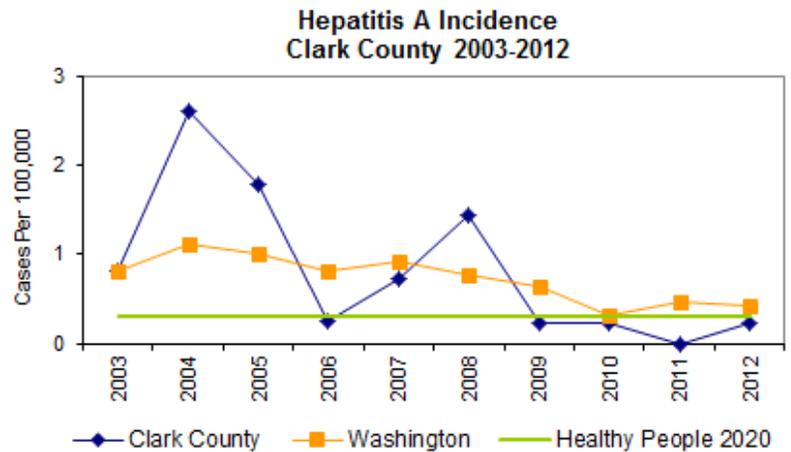


In contrast to chlamydia, most reported gonorrhea infections were symptomatic. Complications cited in 2012 included pelvic inflammatory disease, disseminated gonorrhea, and other complications.

Hepatitis A, acute

Key Information:

- Hepatitis A is a foodborne disease that affects the liver, however it does not result in chronic infection like Hepatitis B or Hepatitis C
- Hepatitis A is a vaccine-preventable disease
- Incidence rates are trending down and are near Healthy People 2020 goals
- Vaccination rates are **increasing** but are **below** Healthy People 2020 goals



Hepatitis A is an acute liver disease caused by the Hepatitis A virus. The natural reservoir of the Hepatitis A virus is humans and other primates. The infection is primarily transmitted via the fecal-oral route in contaminated food or water, although it can be spread from person to person. Exposures are usually fecally contaminated uncooked food, produce, or shellfish, and is often encountered during international travel. The incubation period ranges from 15 to 50 days and people are most contagious a few weeks prior to exhibiting symptoms. Children younger than 6 years of age usually do not have symptoms, but older children and adults can have an infection ranging from mild illness to severely disabling disease. Symptoms include fever, yellowing of the skin and eyes, loss of appetite, and nausea. Unlike Hepatitis B and Hepatitis C, chronic infection with Hepatitis A is not known to occur.

Hepatitis A is a vaccine-preventable disease in the United States. Vaccines are recommended for children 1 year of age and older, though Hepatitis A vaccination is not a school requirement in Washington. Vaccines are also recommended for anyone traveling to endemic areas. Preventive strategies also include practicing good hygiene, proper food handling techniques, proper sanitation practices, and avoiding mollusks from contaminated waters.

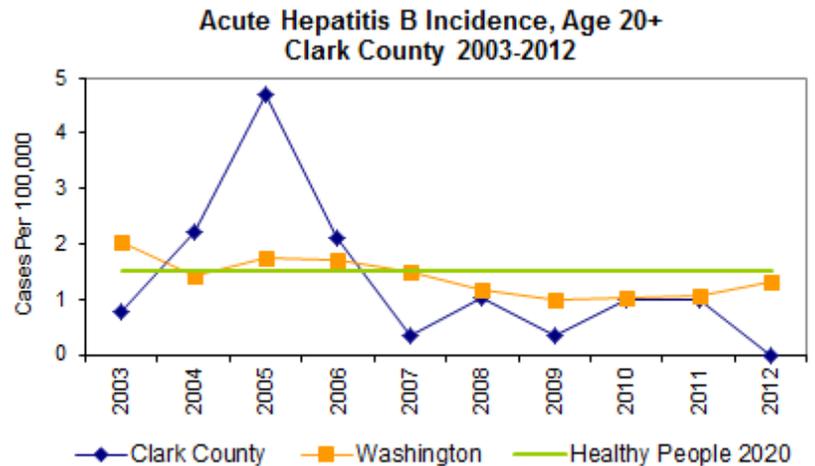
1 case of acute Hepatitis A was reported in Clark County in 2012. Since introduction of the vaccine, the number of cases has decreased dramatically. Clark County rates are similar to Washington rates.

The Healthy People 2020 goals for Hepatitis A are an incidence rate of 0.3 cases per 100,000 population and vaccine coverage of 60% by age 19 to 35 months. Both Clark County and Washington rates are near the incidence rate goal. Though vaccination rates have risen in the last 5 years, both national and state immunization rates have not met the Healthy People 2020 immunization goal. Washington's immunization rate is 51.0% at age 19-35 months.

Hepatitis B, acute

Key Information:

- Hepatitis B is a viral liver disease that can lead to chronic infection
- Young children have the highest risk for developing the most severe symptoms of Hepatitis B
- Hepatitis B is a vaccine-preventable disease
- The incidence rate for Clark County and Washington is **below** Healthy People 2020 goals. Vaccination rates are **below** Healthy People 2020 goals



Hepatitis B is an acute liver disease caused by the Hepatitis B virus. Humans are the only known natural reservoir of the Hepatitis B virus. Hepatitis B is transmitted through activities that involve percutaneous (i.e., puncture through the skin) or mucosal contact with infectious blood or body fluids (e.g., semen, saliva) including, sex with an infected partner, sharing needles, syringes, or drug-preparation equipment, birth to an infected mother, contact with blood of an infected person, needle sticks or sharp instrument exposures, or sharing items such as razors or toothbrushes with an infected person. Hepatitis B is not spread through food or water, sharing eating utensils, breastfeeding, hugging, kissing, hand holding, coughing, or sneezing.

The incubation period ranges from 60 to 90 days, and infection is communicable throughout the clinical course of disease. Clinical manifestations vary in severity. While asymptomatic cases are common, more severe cases of acute Hepatitis B can cause liver failure and can be fatal. Symptoms can include loss of appetite, abdominal discomfort, and nausea. After acute Hepatitis B, the risk of developing chronic Hepatitis B infection varies inversely with age; those infected at a very young age or with immune-compromising conditions are more likely to develop chronic Hepatitis B. Two-thirds of those with chronic Hepatitis B will develop chronic liver disease over their lifetime. High risk groups include health care workers

with contact to infected blood, injection drug users, those with multiple sexual partners, MSM, hemodialysis patients, and prisoners. No specific treatment is available for Hepatitis B.

Hepatitis B is a vaccine-preventable disease in the United States. Vaccines are recommended at birth with two more doses required by 18 months of age. Three total doses are required for school in Washington.

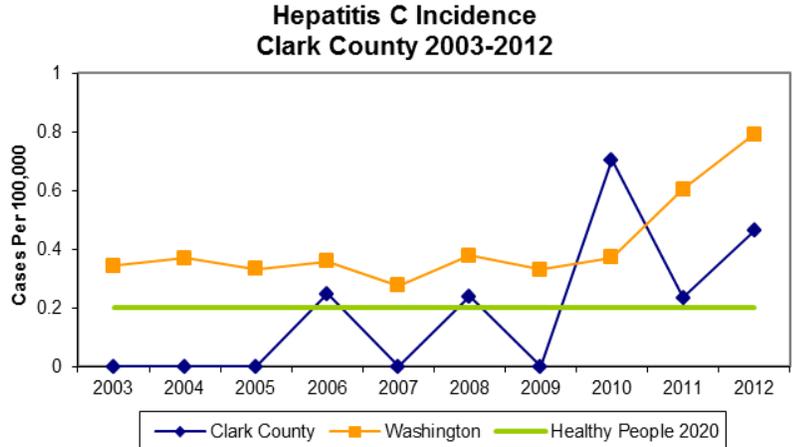
There were no cases of acute Hepatitis B cases reported in Clark County in 2012 although a small number of cases have been reported in each of the past 5 years. None of the cases were in people under 20 years of age. Most cases reported were men. Statewide, incidence of acute Hepatitis B has declined as vaccination rates have increased.

The Healthy People 2020 goals for Hepatitis B are a total of less than 400 mother-to-infant cases nationwide and an incidence rate of 1.5 cases per 100,000 in those over 19 years of age. Clark County has not seen a case of mother-to-infant Hepatitis B in the last 10 years and the 5-year incidence rate in those over age 19 years of age is below this incidence rate goal. The Hepatitis B Healthy People 2020 immunization goals are 80% receiving a birth dose, 90% getting 3 doses by 18-35 months, and 95% getting 4 doses by kindergarten. Washington and Clark County immunization rates are lower than these goals.

Hepatitis C, acute

Key Information:

- Hepatitis C is a viral liver disease that can lead to chronic infection
- Prevention strategies include using sterilized needles for medical procedures and injection drug use
- The incidence rate for Washington is **higher** than Healthy People 2020 goals



Hepatitis C is a liver disease caused by the Hepatitis C virus. The Hepatitis C virus is found only in humans and is primarily transmitted parenterally (e.g., contaminated needle sticks, blood product transfusion, injection drug use). Mother to child and sexual transmission is possible but is less frequent. The incubation period ranges from 2 weeks to 6 months, and can be communicable over the entire course of illness. Common symptoms include yellowing of the skin and eyes, fatigue, loss of appetite, and nausea, but most cases (90%) are asymptomatic resulting in underreporting of acute Hepatitis C. Of all Hepatitis C cases, 50% to 80% develop a chronic infection. About half of chronically infected individuals will develop cirrhosis or liver cancer in their lifetime. Hepatitis C prevalence is directly related to the number of people sharing injection equipment.

High risk groups include current or former injection drug users, recipients of blood products made before 1987, recipients of blood transfusions or solid organ transplants before 1992, hemodialysis patients, health care workers after contaminated needlesticks, persons with HIV infection, and children born to HCV-positive mothers.

Prevention strategies include avoiding using unsterilized needles for medical procedures and injection drug use. Two cases of acute Hepatitis C were reported in Clark County in 2012 and small numbers of cases have been reported in 5 of the last 10

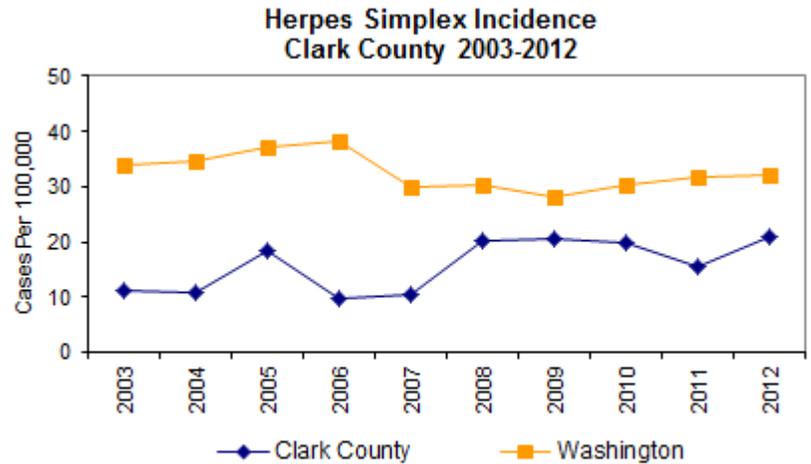
years. A total of 54 cases were reported in Washington in 2012. The incidence rate in Washington is higher than the 5 year average. Some of this increase can be explained by physicians increasingly looking for Hepatitis C during routine exams.

The Healthy People 2020 goal for Hepatitis C is an incidence rate of 0.2 cases per 100,000 population. The five year average incidence of Hepatitis C in Washington is 0.5 cases per 100,000 population which is above the Healthy People 2020 goal. The five year average incidence in Clark County is closer to the Healthy People 2020 goal at 0.3 cases per 100,000 population.

Herpes Simplex

Key Information

- Herpes simplex is a viral sexually transmitted infection that is lifelong
- Young people are at an increased risk
- Prevention strategies include health education and safe sex practices



Herpes simplex is a viral infection characterized by a primary lesion, periods of dormancy, and a tendency for recurrence. The herpes simplex virus infects the genital tract or the oral mucosa, and is acquired at birth or is sexually transmitted by vaginal, oral, or anal sex.

When symptoms do occur, they typically appear as one or more blisters on or around the genitals, rectum or mouth. The blisters break and leave painful sores that may take two to four weeks to heal. Experiencing these symptoms is sometimes referred to as having an “outbreak”.

Repeat outbreaks of genital herpes are common, in particular during the first year of infection. Symptoms of repeat outbreaks are typically shorter in duration and less severe than the first outbreak of genital herpes. Although the infection can stay in the body indefinitely, the number of outbreaks tends to decrease over a period of years.

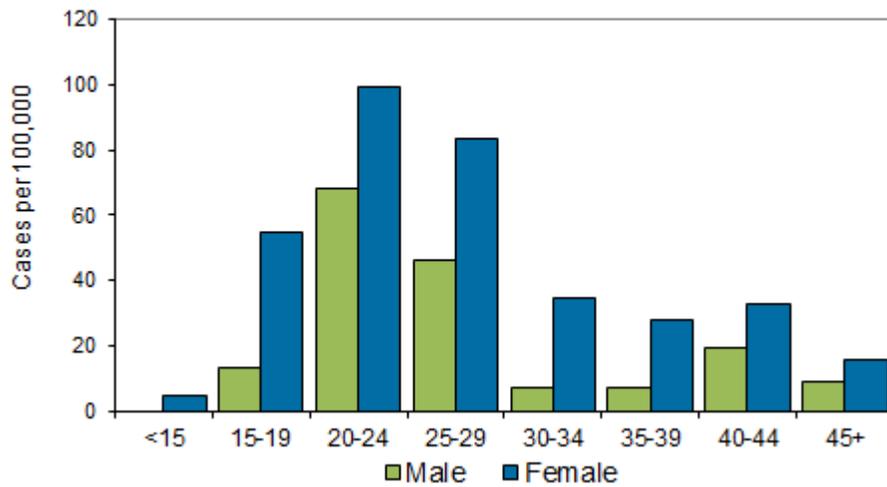
The incubation period ranges from 2 to 12 days and is communicable for up to 7 weeks after each occurrence of lesions and may be intermittently shed in the absence of symptoms. Infection can be lifelong. Asymptomatic or subclinical infections are common in adults. Sometimes genital herpes infection can lead to miscarriage or premature birth. Herpes infection can be passed from mother to child resulting in a potentially fatal infection

(neonatal herpes). It is important that women avoid contracting herpes during pregnancy. Herpes simplex infections can be severe for infants and neonates as infection involving the liver or brain can be fatal. Anti-viral drugs can partially control the frequency and severity of outbreaks, but are not a cure.

Emphasis on health education and safe sex are key preventive strategies. Health care personnel and patients with certain skin conditions should be protected from infectious contamination, and caesarean sections should be advised for infections in late pregnancy. Safe sexual practices and proper condom use can decrease but not eliminate the risk of infection.

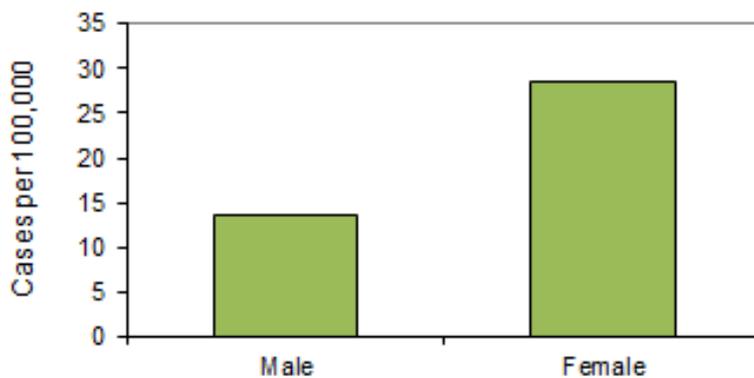
There were 91 cases of herpes simplex reported in Clark County in 2012. The estimated incidence rate is near the five year average incidence from 2008 to 2012. The highest incidence rates were observed among those in their 20’s and rates were significantly higher among females than males, although this may be because of routine testing during gynecological exams rather than a true difference. Clark County incidence rates have consistently been below incidence rates for Washington.

**Herpes Simplex Incidence by Age Group and Gender
Clark County 2012**



The most at-risk age groups for Herpes Simplex are young adults. Women are reported more often at every age category.

**Herpes Simplex Incidence by Gender
Clark County 2012**

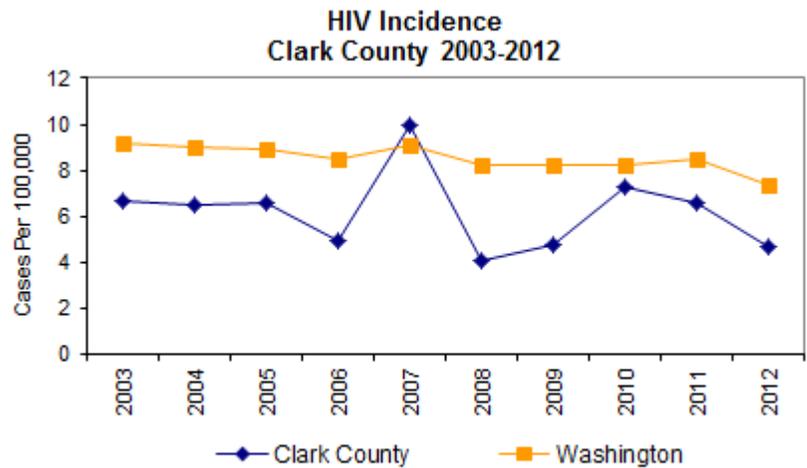


Herpes simplex is more commonly reported in women than in men. This difference is likely due to women seeking regular gynecological screening rather than a true difference in herpes simplex rates.

Human Immunodeficiency Virus (HIV)

Key Information

- **Human Immunodeficiency Virus (HIV) is a viral infection that is transmitted sexually or by blood. HIV is not spread by casual contact such as shaking hands, hugging, sharing a drinking glass, etc.**
- **Injection drug users, people with multiple sex partners, and MSM are more at risk for HIV**
- **Prevention strategies include health education, safe injection practices, and safe sex practices**



Human immunodeficiency virus (HIV) is a viral infection that can lead to acquired immunodeficiency syndrome (AIDS). HIV generally progresses in stages. The first stage, acute infection, starts 2 to 4 weeks after infection and during this time, infected individuals may feel sick with flu-like symptoms. The ability to spread HIV is highest during this phase as amount of virus in the blood is very high. This stage is followed by a latent phase where the body recovers from acute infection, but HIV is still active at low levels. For those not on treatment, this phase can last up to a decade, but is often shorter. During this period the person may not show symptoms but HIV damages the body's immune system, CD4 cells in particular, until the infected individual reaches the final stage, AIDS. Those with AIDS have a damaged immune system and are vulnerable to infections and infection-related cancers. People with AIDS need medical treatment to prevent death.

HIV is only found in certain bodily fluids: blood, semen, rectal fluids, vaginal fluids, and breast milk. These fluids must come in contact with a mucous membrane or damaged tissue or be directly injected into the bloodstream for transmission to occur. In the United States, HIV is mainly spread by unprotected sex and sharing needles. HIV can be transmitted at any stage after infection and is strongly related to how

much virus is in the blood. Infection is lifelong, and if left untreated, over 90% of HIV infected people progress to AIDS.

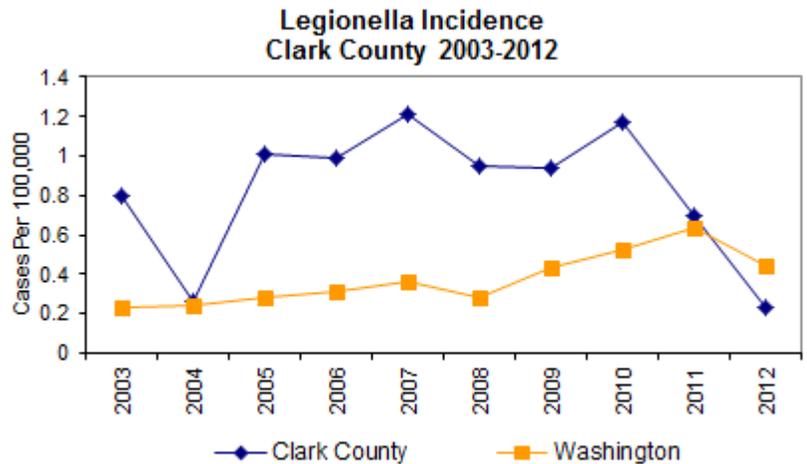
Anti-retroviral therapy (ART) has increased the life expectancy and quality of life of people with HIV, although it is not a cure. Being on ART reduces the amount of virus in the blood, making transmission less likely. Getting tested, knowing sexual partners' HIV status, health education, safe sex and safe injection practices are key prevention strategies. Safe sexual practices and proper condom use can decrease but not eliminate the risk of infection.

There were 20 new cases of HIV reported in Clark County in 2012. The estimated incidence rate (4.6 cases per 100,000 person years) is near the five-year average incidence from 2008 to 2012 and is lower than the last two years' incidence rates. Clark County incidence rates have consistently been below Washington average incidence rates and is below the Healthy People 2020 Goal of 12.4 new cases per 100,000 person years.

Legionellosis

Key Information:

- Legionella is a rare bacterial lung infection caused by exposure to an infected water source
- Infection is more common and severe in the elderly and in the immunocompromised
- Legionella can be prevented by controlling bacterial growth in water supplies
- The number of cases reported in Clark County has been low but consistently **above** the Washington rate during the last 10 years

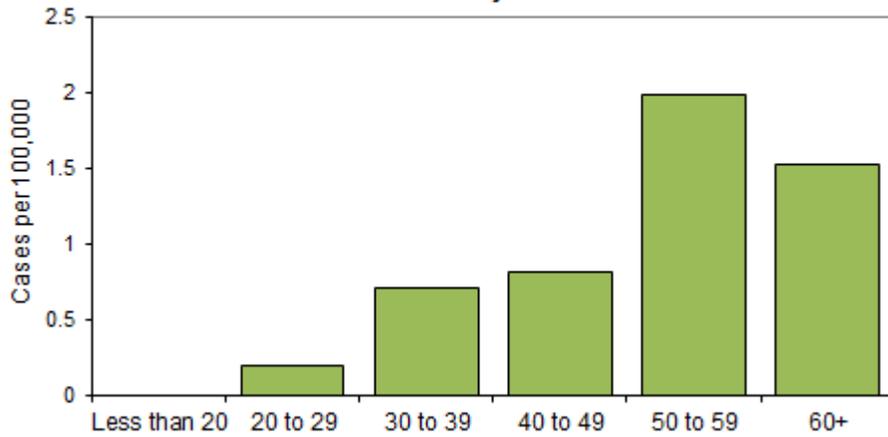


Legionellosis is a bacterial disease caused by the *Legionella* family of bacteria. *Legionella* bacteria grow in warm water; important reservoirs include hot tubs, cooling towers, air conditioning systems, and large plumbing systems. Transmission is through inhaling contaminated water droplets. Person-to-person transmission is uncommon. The incubation period ranges from 2 to 10 days. The two distinct forms of legionellosis are Legionnaire's disease and Pontiac fever. Both conditions are characterized by fever, muscle aches, and headache, but Legionnaire's disease is more severe, progressing to pneumonia and sometimes respiratory failure. Infection is most common among the elderly and the immunocompromised. Outbreaks have been associated with hotels, hospitals, assisted-living facilities, and respiratory therapy devices. Despite recent improvements in diagnostics and treatment, the case-fatality rate for Legionnaire's is about 15%.

Legionellosis can be prevented by control of bacteria growth in water supplies. Cooling towers should be drained when not in use and mechanically cleaned. Biocides can be used to limit bacteria and algae growth. The risk of transmission can also be reduced by maintaining hot water systems at 50°C or higher.

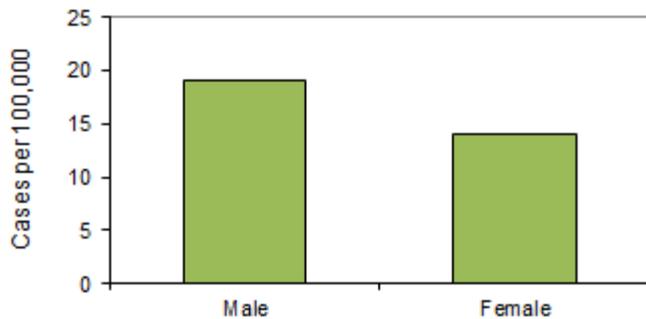
There were 2 cases of Legionellosis reported in Clark County in 2012 and small numbers of cases have been reported in each of the last 10 years. Cases reported exposures within and outside of Clark County. The incidence rate in Clark County has been historically higher than the Washington rate. State and national rates of legionella appear to be increasing, although it is unclear whether this is due to better diagnostics or due to an increase in disease burden.

**Legionella Incidence by Age Group
Clark County 2003 - 2012**



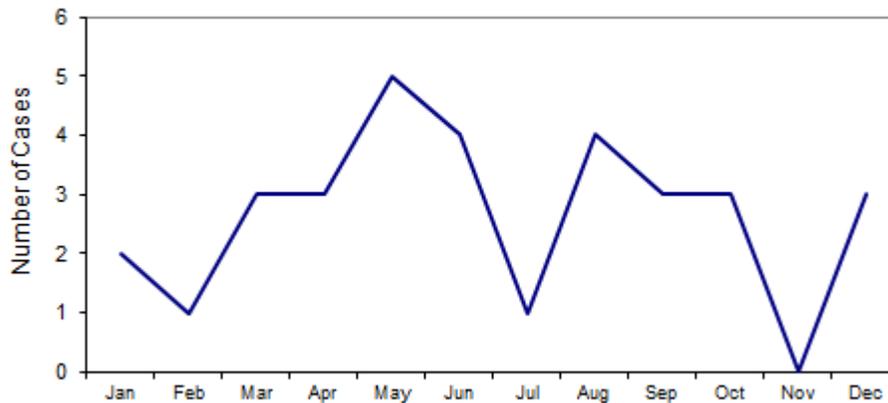
The most at-risk age groups for Legionella are the elderly. This is likely due to diminished immune systems in the elderly as well as the elderly having more co-morbidities such as diabetes, chronic lung disease, emphysema, or cancer.

**Legionella Case Counts by Gender
Clark County 2003 - 2012**



During this time period more men than women were reported. This is consistent with national trends.

**Legionella Cases by Month of Onset
Clark County 2003 - 2012**

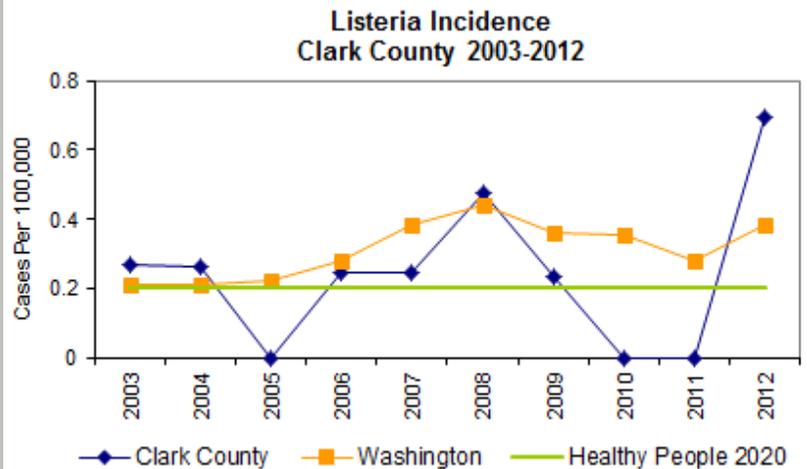


As legionella is usually spread by aerosolized warm water in building systems rather than person to person or by a natural environmental organism, it is unclear whether we would expect to find a temporal pattern in legionella cases.

Listeriosis

Key Information:

- **Listeria is a foodborne bacteria that can multiply at refrigerator temperatures**
- **Pregnant women, neonates, the elderly, those with diabetes, and the immunocompromised are more at risk**
- **Listeria can be prevented by thoroughly cooking raw food, good kitchen hygiene and avoiding unpasteurized foods**
- **The 5 year average Clark County incidence rate for listeria is **above** Healthy People 2020 goals**



Listeriosis is a disease caused by the bacteria *Listeria monocytogenes*. Reservoirs of listeria bacterium include wild animals, waterfowl, and humans. Transmission is usually fecal-oral although mother-to-infant transmission and contaminated surfaces have been implicated in outbreaks. Unlike other foodborne pathogens, listeria can multiply in contaminated refrigerated foods and can persist in moist and cool environments for long periods of time. Common food vehicles include non-pasteurized milk, soft cheese and ready-to-eat meats. The incubation period is longer than most foodborne pathogens (3-70 days) as listeria is more often reported as an invasive disease rather than a diarrheal illness. Listeriosis is most commonly reported as blood or nervous system infections. Symptoms can include fever, muscle aches, stiff neck, confusion, loss of balance, and convulsions. In pregnant women, it can cause fever and miscarriage. Asymptomatic listeria infections are common, although of those infected with nervous system listeriosis, the case-fatality is about 30%. Those at the highest risk for infection include infants, the elderly, the immunocompromised, pregnant women, and adults with diabetes.

Listeria may be prevented by cooking raw meats thoroughly, washing raw fruits and vegetables, avoiding kitchen cross-contamination, and avoiding unpasteurized milk. Those at

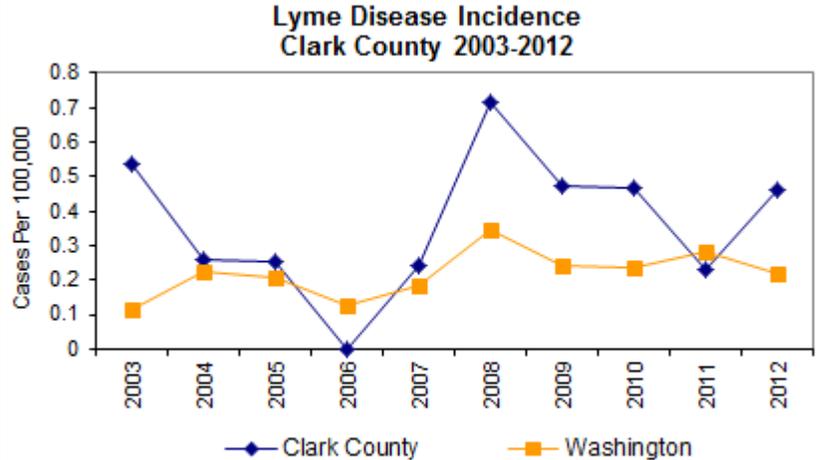
high risk should also avoid soft cheeses such as brie, feta, or Mexican-style queso unless they have labels that clearly state they are made from pasteurized milk.

There were 3 cases of listeria reported in Clark County in 2012. Clark County trends over this time period are difficult to decipher due to small numbers and sporadic outbreaks. Although the incidence rate is volatile, the low number of cases reported is consistent with a low and constant rate. A total of 26 cases were reported in Washington in 2012. The Healthy People 2020 goal for listeria is an incidence rate of 0.2 cases per 100,000 population. The 5 year average incidence rate for Clark County is 0.28 cases per 100,000, which is slightly above the Healthy People 2020 Goals. Washington's incidence rate is also above this goal.

Lyme Disease

Key Information:

- Lyme disease is a tickborne bacterial infection that is usually, though not always, acquired out-of-state
- Lyme disease can be prevented by taking measures to avoid tick bites and checking for ticks after being in tick infested areas
- The number of cases reported in Clark County has been low but consistent over the last 10 years



Lyme disease is a tickborne, zoonotic infection caused by the spirochete bacterium *Borrelia burgdorferi*. Only certain tick species can transmit Lyme disease from the rodent or deer reservoirs. In the Pacific Northwest *Ixodes pacificus* is the primary vector. Mode of transmission is through bites of infected ticks. It is likely that transmission does not occur until the tick has been attached for 24 hours or more. The incubation period ranges from 3 to 32 days and there is no evidence of person-to-person transmission. Lyme disease often first manifests as a distinctive target-shaped skin rash called *erythema migrans*, also called a bull's eye rash, followed by systemic symptoms such as malaise, headache, fever, stiff neck, myalgia, and in severe cases by neurologic complications. Untreated Lyme disease patients can develop neurological, arthritic, or cardiac symptoms following initial infection, sometimes lasting months to years. Antibiotic therapy is used for treatment of initial infection although is unhelpful in treating longer term effects.

Lyme disease can be prevented by avoiding exposure to ticks by avoiding tick-infested areas, covering exposed skin, and checking for and removing ticks on yourself and your pet following likely exposure.

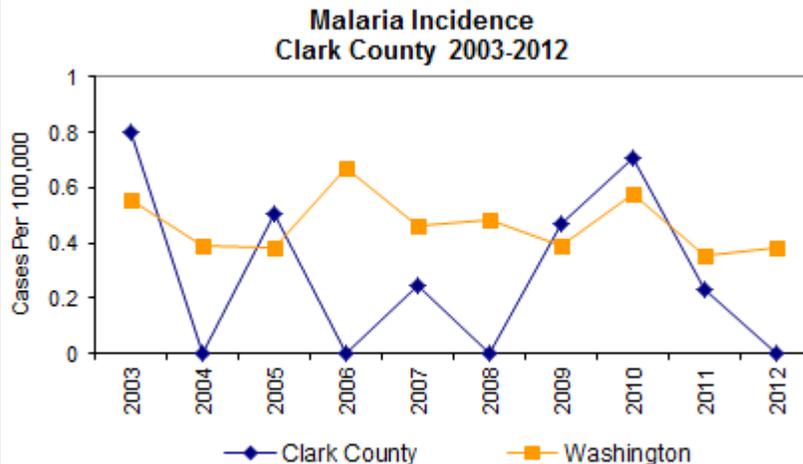
There were 2 cases of Lyme disease reported in Clark County and 15 cases in Washington in 2012. Lyme disease

remains a rare condition in Clark County although a small number of cases have been reported every year for the past 5 years. Due to the rarity of the disease, determining a trend is difficult although the data is consistent with a low and flat incidence rate. All of the Clark County cases reported travel to endemic areas outside of Washington. Lyme disease has been acquired both within and outside of Washington.

Malaria

Key Information:

- Malaria is a mosquito-borne parasitic disease that, despite being rare in Clark County and in Washington, is a major cause of death and disability globally
- All cases of malaria in Clark County have been imported from outside the United States
- Prevention strategies include avoiding mosquito bites when traveling in high risk areas and taking medication to avoid malaria



Malaria is a parasitic disease caused by infection with several species of single-celled organisms of the *Plasmodium* genus. The natural reservoir is within humans and non-human primates. Malaria is no longer endemic in the United States, however it is a major cause of morbidity and mortality in many parts of the world. Transmission occurs by the bite of an infected female mosquito or less commonly by transfer of infected blood products, non-sterile injection equipment, organ transplant or direct transmission from mother to fetus. The incubation period for the most severe infection is 9-14 days although in some cases can be much longer. Humans can infect mosquitoes for as long as the organisms are in the blood. In untreated cases, this can be as long as a year. Symptoms include high fever, chills, sweats, and headache. Complications from malaria infection are severe and can include encephalitis, severe anemia, jaundice (yellowing of the skin and eyes), kidney failure, and shock.

Infection is treated with anti-malarial drugs and supportive care. Prevention strategies include avoiding mosquito bites when traveling in high risk areas and taking medication to avoid malaria.

There were no cases of malaria reported in Clark County in 2012 though there have been a small number of cases reported in four of the last five years. All of these cases were

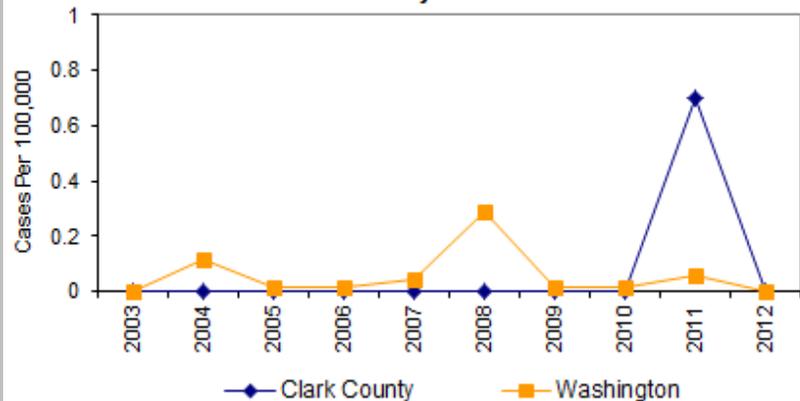
acquired outside of the United States. A total of 26 cases were reported in Washington in 2012, all of whom acquired malaria outside of the United States and most of whom had traveled to Africa or India.

Measles

Key Information:

- Measles is a highly contagious viral disease that historically was a common childhood disease.
- Measles is no longer endemic in the western hemisphere, but is imported from other areas of the world
- Vaccines are the best way to protect against measles.
- Nationally, disease burden is near Healthy People 2020 goals and Clark County is **below** vaccination goals

Measles Incidence
Clark County 2003-2012



Measles is an acute viral disease caused by a *Morbillivirus*. Humans are natural reservoir for the virus and the virus can be transmitted by airborne droplets or direct contact with infected respiratory secretions. The incubation period ranges from 7 to 18 days. Measles is one of the most contagious diseases known. The period of communicability starts 4 or 5 days before rash onset and lasts until 4 days after rash onset.

Measles has a distinct early set of symptoms that begins with high fever, red eyes, runny nose, cough, and eye discomfort in brightly lit areas. Two to four days after fever onset, a rash begins on the head and spreads downward reaching the hands and feet. Complications of ear infections (7%), pneumonia (6%) and encephalitis (0.1%) can occur and disease is more severe in the very young and malnourished. Nineteen percent of measles cases are hospitalized and 1-3 per 1,000 cases die in the United States. Treatment is supportive.

Measles can be prevented by routine vaccination. The vaccine is recommended as a two dose series with the first dose at age 12-18 months old and the second at age 4-6 years. Measles vaccine is part of the measles-mumps-rubella (MMR) vaccine and is a required vaccination for school in Washington. The Western Hemisphere has been declared endemic measles-free since November 2002 although importations continue to occur requiring high population vaccination coverage.

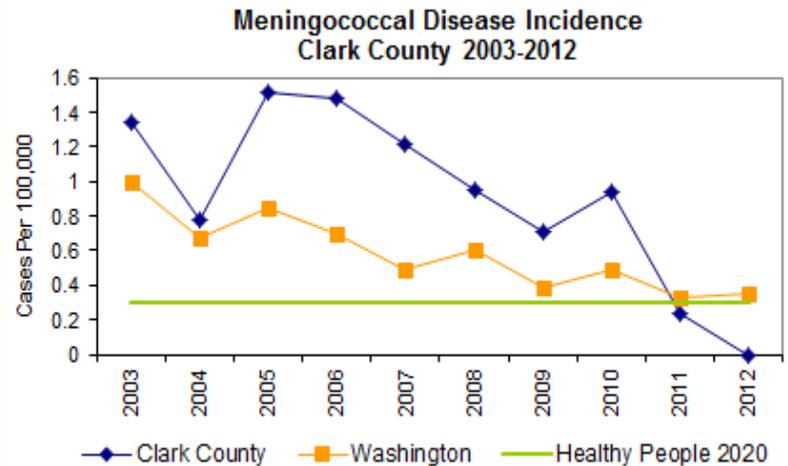
There were no cases of measles reported in Clark County or in Washington in 2012. Each year there are typically fewer than 5 cases reported in Washington, although outbreaks with 7-19 cases occurred in Washington in 2001, 2004, and 2008.

The Healthy People 2020 goals for measles are a total of 30 US-acquired cases nationwide, 1-dose vaccine coverage of 90% by age 19 to 35 months, and 95% two-dose vaccine coverage by kindergarten. In 2012, CDC reported 63 measles cases, about half of which were likely US-acquired, near the disease burden goal. Washington and Clark County's immunization rates (kindergarten: Clark County 87.9%, Washington 91.7%) are below the Healthy People 2020 goals.

Meningococcal Disease

Key Information:

- Meningococcal disease is an uncommon bacterial disease that causes many sub-clinical infections but in some people causes severe disease
- The most common strains of *N.meningitidis* can be prevented by vaccination
- Clark County and Washington incidence is **below** Healthy People 2020 goals. Vaccine coverage is **below** these goals



Meningococcal disease is an acute bacterial infection caused by *Neisseria meningitidis*. Humans are the natural reservoir and infection is transmitted by direct contact with respiratory droplets of infected individuals. Susceptibility to the clinical disease is low although asymptomatic carriage is common and asymptomatic carriers can transmit disease. The incubation period ranges from 2 to 10 days and infection is communicable as long as the bacterium is present. The infection is characterized by fever, headache, nausea, vomiting, and stiff neck. Invasive disease can lead to bacteremia, bloodstream infections, or meningitis. Infants less than 12 months old are at the highest risk for complications from meningococcal disease. Treatment includes antibiotics and supportive care.

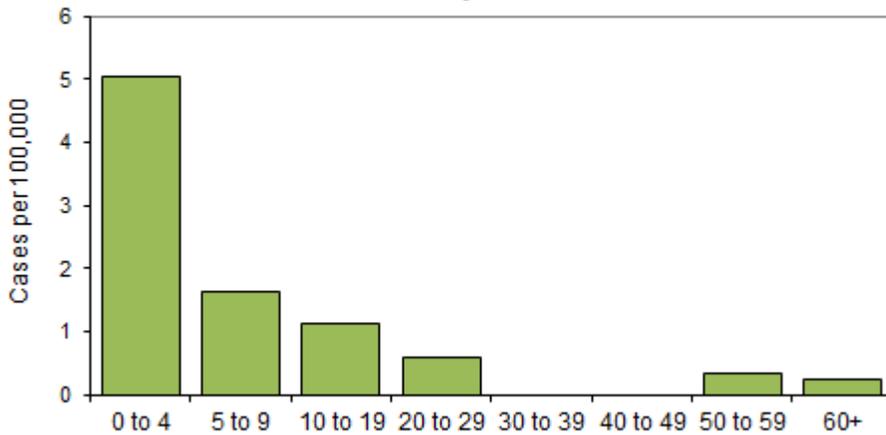
Most, although not all, strains of *N.meningitidis* can be prevented by vaccination. The vaccine protects against four serotypes: Group A, Group C, Group Y, and Group W-135. No vaccine is currently available in the United States for Group B, which causes approximately a third of all *N.meningitidis* infections in the United States. The vaccine is recommended as a two dose series for adolescents with the first dose at age 11 and the second at age 16. Children with immune-compromising conditions and children who travel to areas

where meningococcal disease is present can be vaccinated as young as 9 months. Meningococcal vaccine is not currently required for school entry although many colleges require vaccination. Vaccination may be recommended or required for travel, especially to Sub-Saharan Africa and the Middle East.

The incidence rate in Clark County and in Washington has declined over the past 10 years as vaccine coverage has increased. There were 0 cases of meningococcal disease reported in Clark County in 2012 and a total of 24 cases reported in Washington. Consistent with national trends, infants and children were at-risk groups and infection is more common during winter and spring.

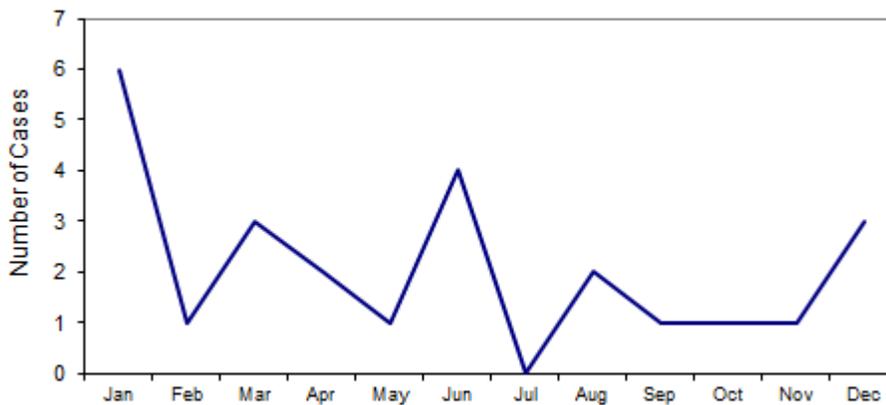
The Health People 2020 goals for meningococcal disease are an incidence rate of 0.3 cases per 100,000 population and a 1-dose vaccine coverage of 80% by age 15. Both Clark County and Washington are currently at or below this disease incidence goal. However, as the disease becomes more uncommon, rates may become unstable due to low numbers. State and national vaccination coverage is increasing, however rates are still below Healthy People 2020 goals. Washington's immunization rate for those aged 13-17 is 71.2%.

**Meningococcal Disease Incidence by Age Group
Clark County 2003 - 2012**



The most at-risk age groups for Meningococcal Disease are the very young. There is no vaccine licensed for use in those under 9 months of age.

**Meningococcal Disease Cases by Month of Onset
Clark County 2003 - 2012**



Historically, Meningococcal Disease incidence has been higher in colder months.

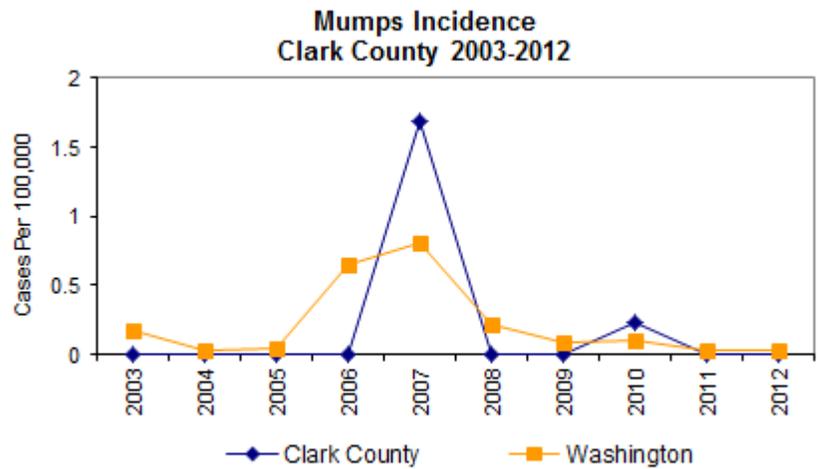
Meningococcal Disease Serotype, 2003-2012	Count
Group B	11
Group C	8
Group Y	5

The vaccine for Meningococcal Disease contains four serotypes: Group A, Group C, Group Y, and Group W-135. No vaccine is currently available in the United States for Group B.

Mumps

Key Information:

- Mumps is a viral disease that historically was a common childhood disease
- Since vaccines were introduced, the incidence rate of mumps has dramatically decreased.
- Vaccines are the best way to protect against mumps
- Nationally, disease burden is near Healthy People 2020 goals and Clark County is **below** vaccination goals



Mumps is an uncommon acute viral disease caused by a paramyxovirus. It is a systemic disease characterized by fever and swelling of one or more salivary glands, usually the parotid gland. Humans are the natural reservoir for the virus and the virus can be transmitted by airborne droplets or direct contact with infected respiratory secretions. The incubation period ranges from 16 to 18 days, and the period of communicability begins 7 days before the onset of parotid swelling and ends 9 days afterwards. Non-specific symptoms include muscle pain, loss of appetite, malaise, headache, and fever. Complications include inflammation of testes or ovaries (20-30%), meningitis (10%), and pancreatitis (4%). Treatment is supportive.

Mumps can be prevented by routine vaccinations. In the pre-vaccine era, mumps was a common childhood disease, in unvaccinated populations it remains a major cause of childhood meningitis and encephalitis. The vaccine is recommended for children 12-18 months old as a component of the measles-mumps-rubella (MMR) vaccine and is a required vaccination for school. Many colleges also require mumps vaccine for entry. Vaccines are the most effective preventive measure against mumps.

There were no confirmed cases of mumps reported in Clark County in 2012 although there have been a small

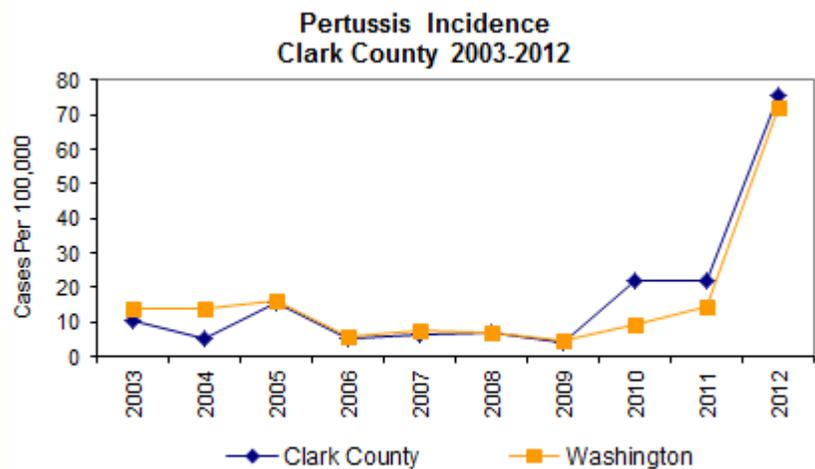
number of cases reported over the past 5 years. In 2012, 2 cases were reported in Washington. With the exception of outbreaks in 2006 and 2007, incidence has remained very low, with less than 10 cases reported statewide in most years.

The Healthy People 2020 goals for mumps are a total of 500 US-acquired cases, 1-dose vaccine coverage of 90% by age 19 to 35 months and 95% 2-dose vaccine coverage by kindergarten. In 2012, 199 cases of mumps were reported nationally. Clark County's kindergarten vaccination rate (87.9%) and Washington's age 19-35 months vaccination rate (84.8%) fall below vaccination goals.

Pertussis

Key Information:

- Clark County and Washington saw a large pertussis epidemic in 2012
- Infants and children are the most at risk for disease and for more severe disease
- Pertussis is a vaccine preventable disease and vaccination is the most effective preventive measure
- Nationally, pertussis case counts are **above** Healthy People 2020 goals. Clark County and Washington are **below** vaccination goals



Pertussis, or whooping cough, is a bacterial infection of the respiratory tract caused by the bacterium *Bordetella pertussis*. Humans are the only host for pertussis and infection is transmitted through contact with respiratory droplets. The incubation period ranges from 6 to 20 days, and pertussis is highly communicable in the first two weeks of cough. The infection is characterized by a sudden severe cough with an inspiratory “whoop” sound. Young children experience the most severe symptoms, especially infants less than 6 months old. Older individuals with mild symptoms often transmit the infection to those more susceptible, including those too young to be immunized. Pertussis can be treated with antibiotics, but severe infections commonly require hospitalization.

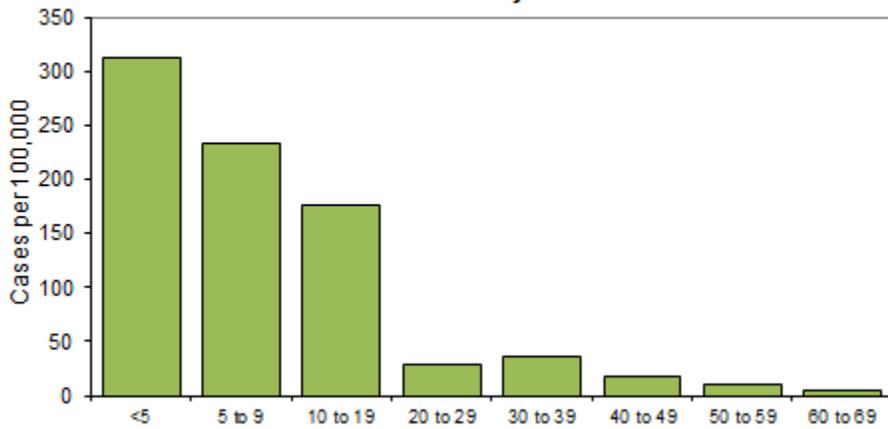
Pertussis can be prevented by routine immunization. The DTaP vaccine is recommended for all infants at two, four and six months, with a booster at 12-18 months and 4-6 years. An additional booster of Tdap, the adult formulation of pertussis vaccine, is recommended at age 10-11 or as a substitute for an adult’s next tetanus booster. DTaP and Tdap are requirements for school in Washington.

Since the middle of 2011, Clark County and Washington have seen a marked increase in pertussis incidence rates leading to Washington declaring an epidemic in April 2012. There were 325 cases of Pertussis reported in Clark County in

2012; the state had a total of 4,916 cases for the year. This epidemic is discussed in the Notable Outbreaks section of this report. Pertussis has previously occurred endemically in 3 to 5 year cycles although this epidemic is much larger than those in recent history. Historically, most cases occurred during the summer months and the highest incidence rates were observed among young children.

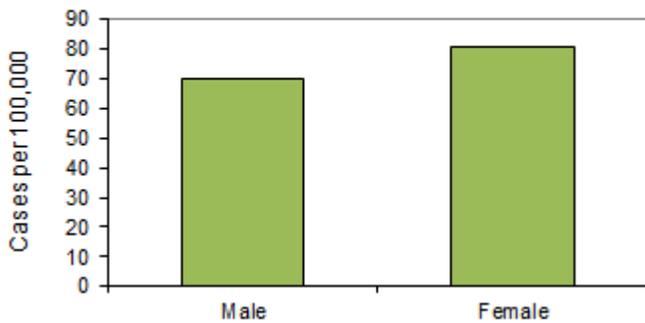
The Healthy People 2020 goals for pertussis are a total of 2,500 cases in children less than one year old and 2,000 cases in children aged 11-18 nationwide. In the United States, over 40,000 cases of pertussis were reported in 2012. The Healthy People 2020 vaccine targets are 90% coverage of children 19-35 months with 95% coverage by kindergarten with four doses of DTaP and 80% coverage of 1 dose of Tdap by age 13-15. Clark County and Washington pediatric vaccination (DTaP) rates are below Healthy People 2020 vaccination goals (kindergarten: Clark County 87.9%, Washington 92.5%). Adolescent vaccination (Tdap) rates are above national goals (Washington, 86.0%).

**Pertussis Incidence by Age Group
Clark County 2012**



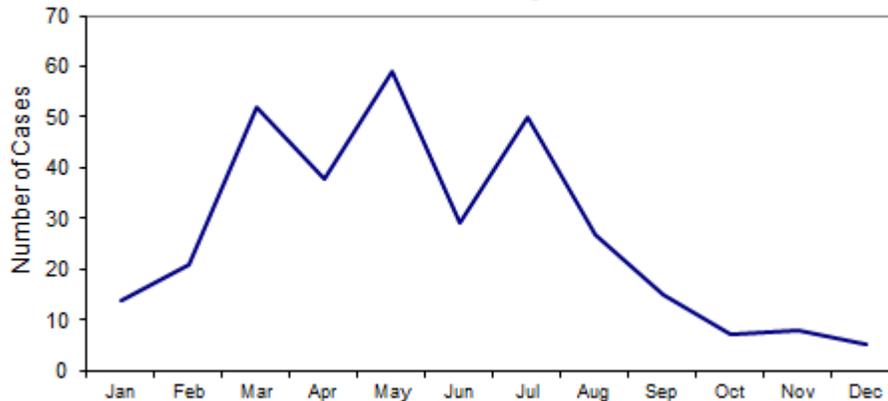
The most at-risk age groups for Pertussis are young children and adolescents. Those less than 1 year old are too young to have completed their primary vaccination series and suffer more severe symptoms.

**Pertussis Incidence by Gender
Clark County 2012**



Men and women in Clark County had similar pertussis incidence rates in 2012.

**Pertussis Cases by Month of Onset
Clark County 2012**

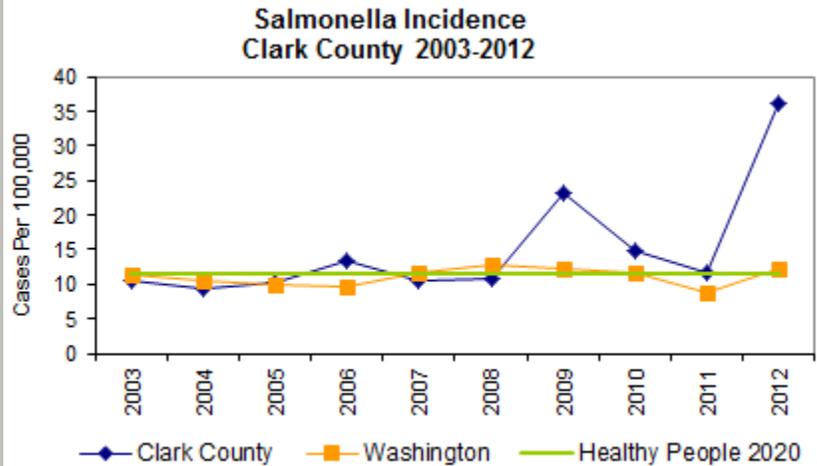


Historically, Pertussis was more common in the summer and fall, however 2012 was an epidemic year and saw the highest incidence in the spring and early summer.

Salmonellosis

Key Information:

- **Salmonella is a foodborne disease that can cause substantial morbidity and mortality**
- **Children and those with chronic conditions are most at risk for disease**
- **Salmonella risk can be reduced by thoroughly cooking meat products, drinking only pasteurized milk and juice, and through safe kitchen practices**
- **Incidence rates in Clark County are **above** Healthy People 2020 goals**



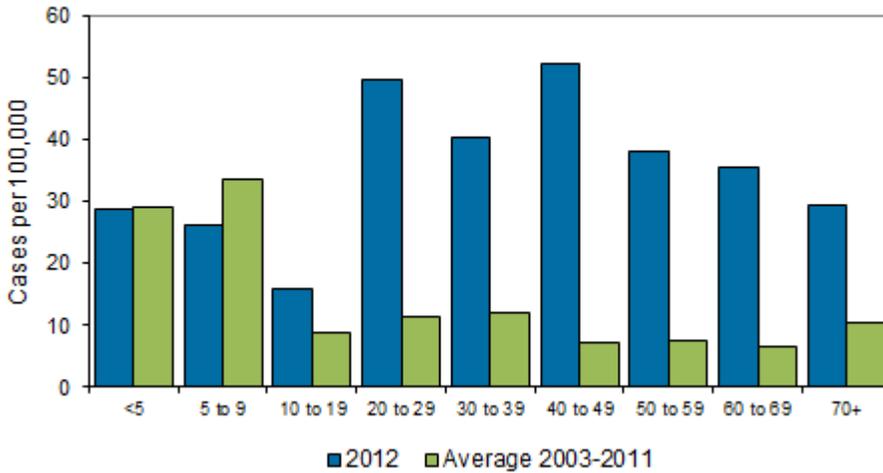
Salmonellosis is a bacterial infection caused by the *Salmonella* family of organisms. *Salmonella* reservoirs include domestic and wild animals, including poultry, swine, and rodents. Infection is transmitted by the fecal-oral route, primarily by ingesting contaminated food or water, although person-to-person transmission does occur. Common food vehicles include undercooked eggs and meats, unpasteurized milk, raw vegetables and pet products. The incubation period ranges from 12 to 72 hours after exposure, and the infection is communicable throughout the entire course of infection. Salmonella commonly manifests as headache, abdominal pain, diarrhea, nausea, vomiting, fever, and dehydration. In about 2% of cases, salmonella causes infections outside of the GI tract, which can have serious complications. Immunosuppression, malnutrition, and other chronic conditions increase susceptibility and severity of disease. Antibiotics are only recommended for those with invasive disease as antibiotics may worsen infection.

Prevention strategies against salmonellosis include thoroughly cooking meats and eggs, and consuming only pasteurized milk, milk products, and juice. Safe practices also include sanitary food preparation and handling and minimizing cross-contamination of food supplies with raw meat or poultry.

There were 156 cases of Salmonellosis reported in Clark County in 2012. The incidence rate in 2012 is higher than the average incidence from 2003 to 2011, and was much higher than the Washington incidence rate for 2012, largely due a single local salmonella outbreak at a restaurant. This outbreak is discussed in the Notable Outbreaks section of this report. Occasionally large nationwide outbreaks occur which can include thousands of people. On average, more cases occur during the summer months and among children aged 0-4 years.

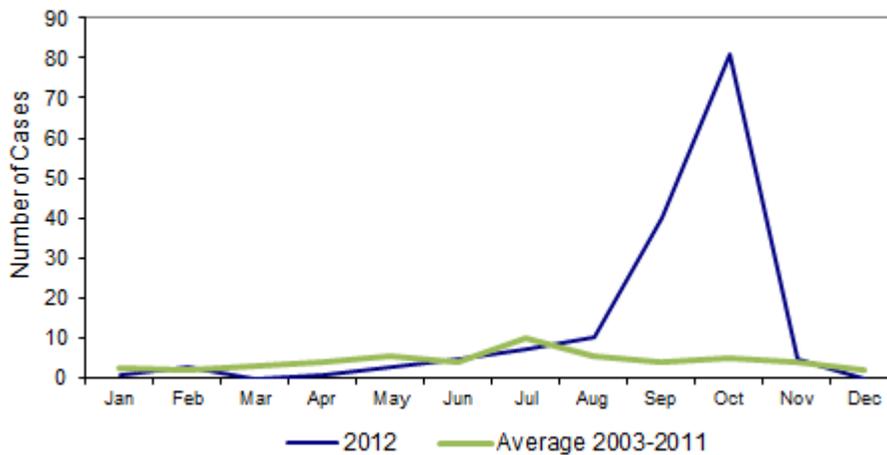
The Healthy People 2020 goal for salmonellosis is an incidence rate of 11.4 cases per 100,000 population. The estimated incidence rate for Clark County in 2012 was 36.2 cases per 100,000 population, higher the Healthy People 2020 goals. Historically, Washington's and Clark County's incidence rate has been very close to this goal.

**Salmonella Incidence by Age Group
Clark County 2012 and 2003-2011**



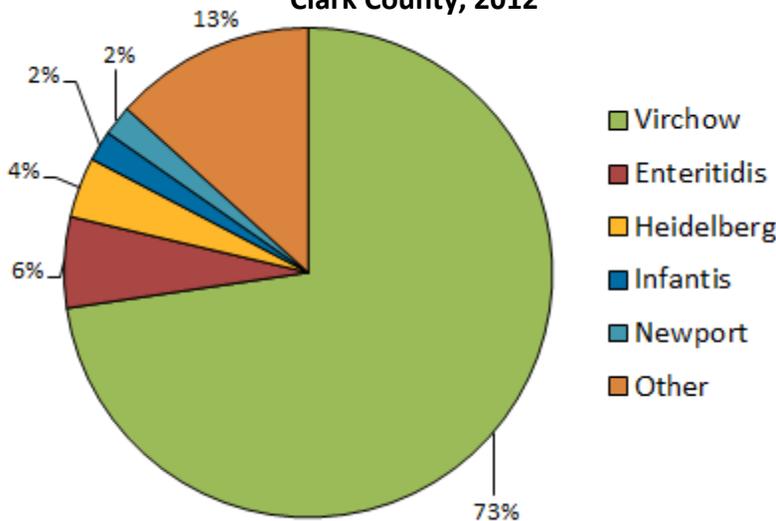
The age distribution in 2012 is different than the historical age distribution because of the large outbreak at a restaurant that catered to the happy hour crowd. Historically, Salmonella is more common in young children.

**Salmonella Cases by Month of Onset
Clark County 2012 and 2003-2011**



Historically, Salmonella is more common in the warmer months, however Clark County Public Health responded to a large local outbreak in October 2012.

**Salmonella Subspecies Identified
Clark County, 2012**

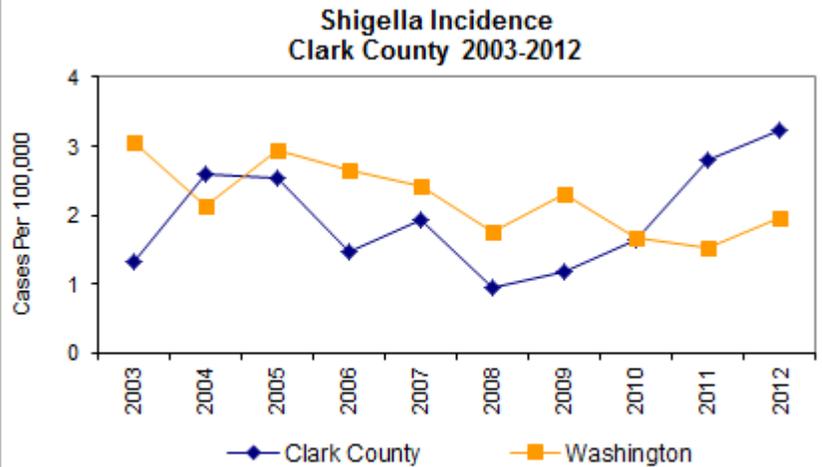


The outbreak strain was *S. Virchow* and accounted for a large percent of all species subtyped. *S. Virchow* is an uncommon subtype in North America. The other subtypes listed are common North American subtypes.

Shigellosis

Key Information:

- **Shigella is a diarrheal disease that is often passed person to person**
- **The disease is more common in children and during the summer**
- **Prevention techniques include good hand hygiene and proper disposal of feces, especially diapers**
- **Incidence has been at a low and steady rate in Clark County with periodic outbreaks**



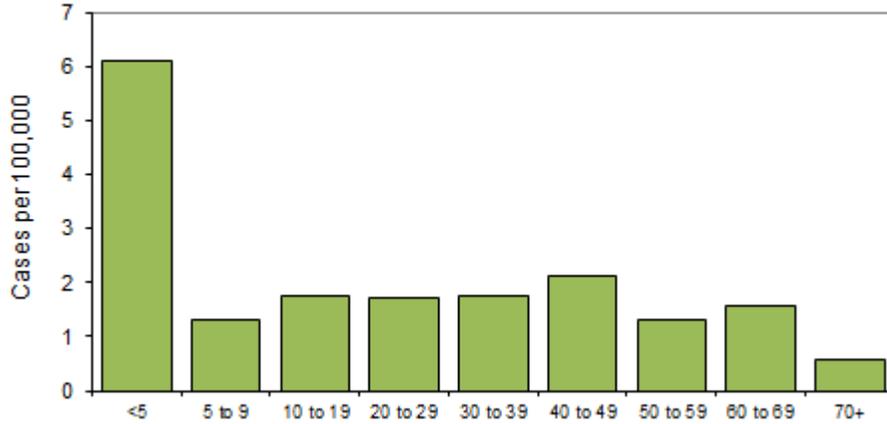
Shigellosis is an acute bacterial infection caused by the *Shigella* family of organisms. Humans are the natural reservoir of the *Shigella* species and the primary mode of transmission is the fecal-oral route. Only a few organisms are needed to cause disease, so infection is commonly transmitted person-to-person. It can also be transmitted by ingesting contaminated food or water. The incubation period usually ranges from 1 to 3 days, and the infection is communicable until the bacteria is no longer present in feces, usually until 4 weeks after the illness. *Shigella* commonly manifests as diarrhea (often bloody), fever, nausea, vomiting, and cramps. Young children, the elderly, and malnourished are more susceptible to complications of dehydration, hemolytic uremic syndrome (a severe blood and kidney complication), and intestinal perforation. Asymptomatic carriage occurs. Most infections do not require therapy, but antibiotics can reduce the duration of diarrhea and can eradicate organisms from feces.

Shigellosis can be prevented with good hand hygiene, and safe disposal of feces, especially diapers. Good sanitary practices in food preparation and proper purification of public water supplies reduce the risk of shigellosis.

There were 14 cases of Shigellosis reported in Clark County in 2012. The incidence rate in 2012 increased in comparison

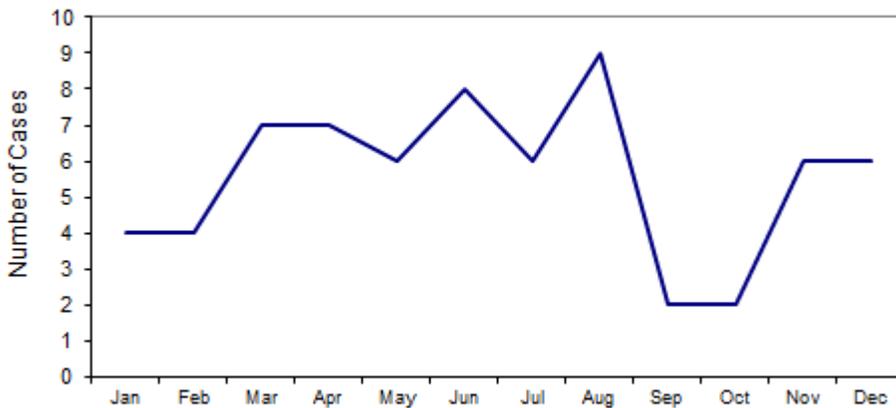
with the average incidence from 2008 to 2011, although the absolute incidence is low. Sporadic outbreaks and low overall incidence make determining a trend in Clark County difficult. A local shigella outbreak from a public swimming area is discussed in the Notable Outbreaks section of this report. Incidence in Washington has been decreasing over the past 10 years. Consistent with national trends, infections are more common in children and in the summer months. Common exposures included recreational water and travel outside of the United States.

**Shigella Incidence by Age Group
Clark County 2003-2012**



The most at-risk age group for Shigella is the very young. This is likely due to poor hygiene. Outbreaks in Clark County have occurred in childcare settings.

**Shigella Cases by Month of Onset
Clark County 2003-2012**

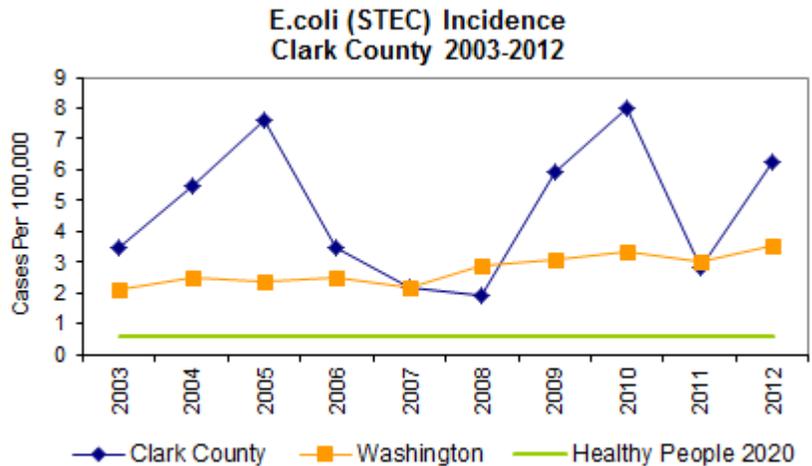


Shigella infections are more common during the summer months likely due to recreational water exposure. Periodic childcare outbreaks account for some of the high spikes of cases in certain months.

Shiga toxin-producing *Escherichia coli* (STEC)

Key Information:

- Shiga-toxin producing *E.coli* (STEC) is a diarrheal disease that can be transmitted by contaminated food, water, animals, and close contact with infected people
- STEC infection can be prevented by having good hand hygiene and safe kitchen practices
- Clark County and Washington have incidence rates **above** Healthy People 2020 goals



Shiga-toxin producing *E.coli* (STEC), including *E.coli* O157:H7 and other strains of *E.coli* that produce shiga-toxins, cause acute diarrheal disease. Cattle and other ruminants including sheep, goats, and deer serve as reservoirs for STEC. Infection is transmitted by the fecal-oral route, mainly by ingestion of undercooked meat, raw milk, and any food or water contaminated with animal feces. Transmission by close contact with animals, infected people, and infected recreational water has also been documented. The incubation period ranges from 2 to 10 days, and period of communicability is usually 1 week after symptom onset for adults, but up to 3 weeks in children. Symptoms include diarrhea, ranging from mild to grossly bloody, and abdominal pain, usually without fever. The most serious manifestation of STEC infection is hemolytic uremic syndrome (HUS, a severe blood and kidney complication), which occurs in 5% of cases, especially young children, that lead to kidney failure. Antibiotics may increase the likelihood for HUS. Treatment includes correcting dehydration and electrolyte abnormalities with orally administered fluids.

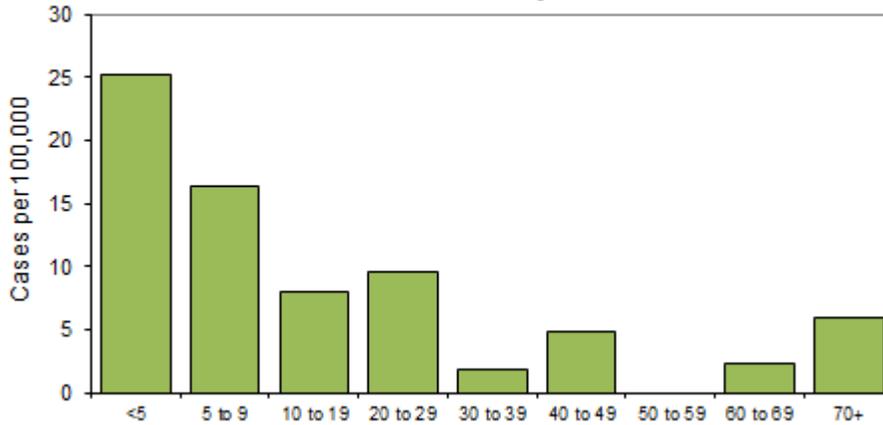
STEC infection can be prevented by practicing good hygiene after contact with farm animals and during food preparation. Produce should be carefully washed, and meat should be thoroughly cooked. Raw milk should be avoided and

cross-contamination of raw meat with other food should be minimized.

There were 27 cases of STEC reported in Clark County in 2012. The incidence rate increased in comparison with the average incidence from 2008 to 2011 and is higher than the Washington incidence. Sporadically, Clark County Public Health responds to large outbreaks of STEC, which explain the dramatic spikes in incidence rates. The greatest incidence was reported among children age 0 to 4 years, and many of the reported cases were associated with outbreaks in childcare settings. Nationally, most cases tend to occur in summer and fall.

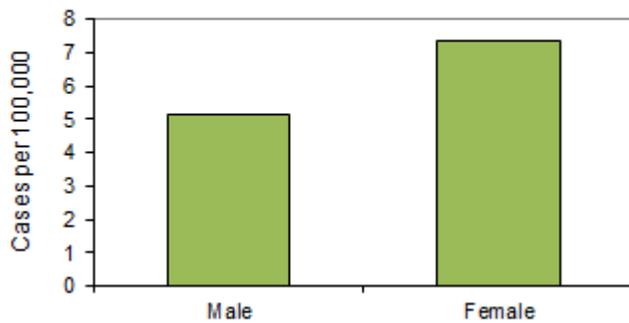
The Healthy People 2020 goal for STEC infections is an incidence rate of 0.6 cases per 100,000 population, well below current levels in both Clark County and in Washington.

***E.coli* (STEC) Incidence by Age Group
Clark County 2012**



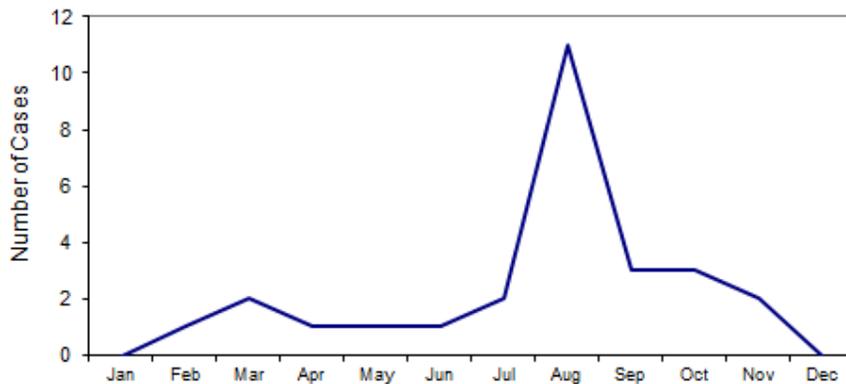
The most at-risk age groups for STEC infections are young children. Children are also at increased risk of HUS and other STEC complications.

***E.coli* (STEC) Incidence by Gender
Clark County 2012**



Although the female incidence rate was higher than in males in 2012, this difference does not reflect patterns at the state and national level.

***E.coli* (STEC) Cases by Month of Onset
Clark County 2012**

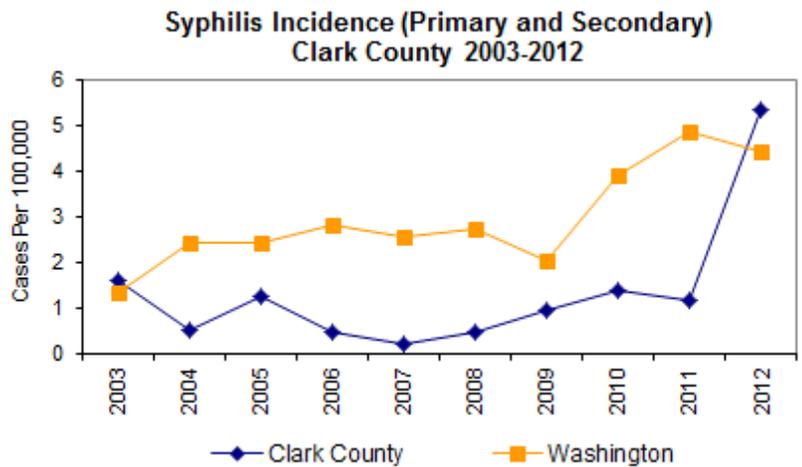


Historically, STEC infections are more common in warmer months. In 2012, a large family cluster was reported in August, accounting for the spike of cases in that month.

Syphilis

Key Information:

- Syphilis is a sexually transmitted bacterial infection that left untreated can cause multi-organ complications
- Prevention measures included health education and safe sex practices. Routine screening is recommended for women of childbearing age
- Incidence rates are **below** Healthy People 2020 goals



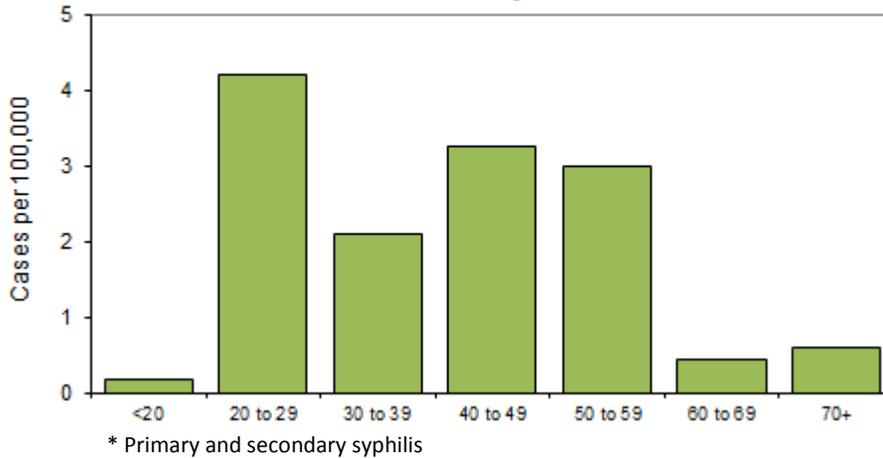
Syphilis is a sexually transmitted disease caused by the spirochete bacterium *Treponema pallidum*. The disease is categorized into stages of progression. Primary syphilis is characterized by a painless ulcer at the site of infection. Secondary syphilis appears 4 to 6 weeks after the primary ulcer appears and consists of fever, rash, headache, and muscle aches. All untreated cases will go on to a latent period where serious complications may appear weeks or years later. Latent syphilis can cause debilitating complications of the cardiovascular and central nervous systems, sometimes many years after initial infection. Fetal infection can occur in infected pregnant women, increasing the risk of stillbirth, preterm delivery, or severe multi-organ disease. The primary stage incubation period ranges from 10 days to 3 months after infection, and is communicable as long as moist lesions are present (primary and secondary stages). Lesions are not always visible as the point of infection is commonly internal. Syphilis can be treated with antibiotics.

Prevention measures include health education and safe sexual practices. Routine screening for women of childbearing age is recommended to reduce the risk of congenital syphilis. Those with syphilis should get screened for HIV as syphilis ulcers make people more vulnerable to HIV and co-infection with other sexually transmitted infections is common.

There were 43 cases of syphilis reported in Clark County in 2012. Twenty-three of the infections reported were acquired in the last year (primary or secondary stages). This is above the five-year average and reflects an increase seen across the state in 2012. Higher incidence rates were observed among men and especially among MSM.

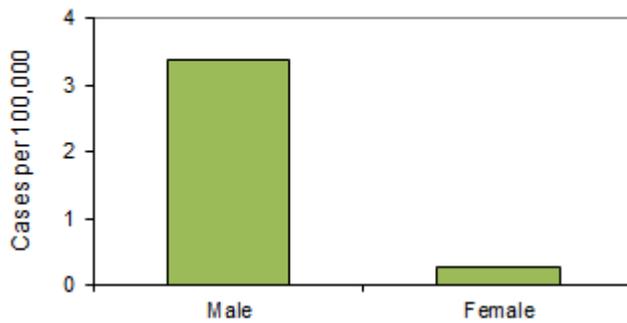
The Healthy People 2020 goals call for a national reduction in incidence rates to 1.4 new cases per 100,000 women, 6.8 new cases per 100,000 men, and 9.1 cases of congenital syphilis per 100,000 live births. The five-year average incidence rate of primary or secondary syphilis in Clark County for men and women (3.4 and 0.3 per 100,000 respectively) is below this goal. Clark County has not seen a case of congenital syphilis in the last 10 years.

**Syphilis Incidence (P&S)* by Age Group
Clark County 2008-2012**



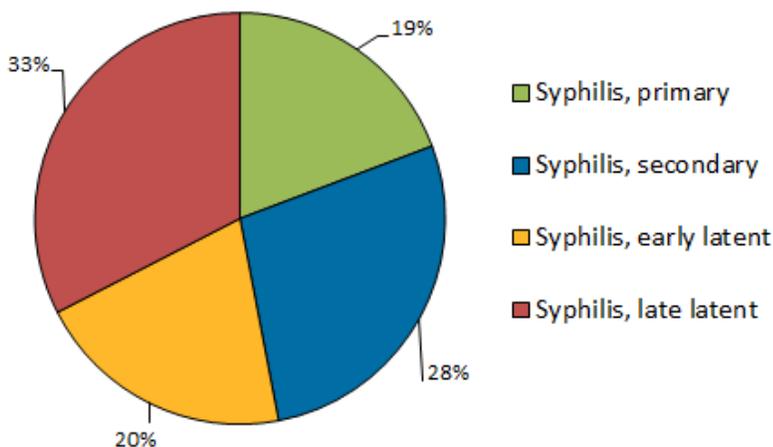
In contrast to other sexually transmitted infections, the age distribution of syphilis in Clark County is older and more equally distributed among 20 to 50 year olds.

**Syphilis Incidence (P&S)* by Gender
Clark County 2008-2012**



Syphilis is reported more often in males than in females. The increase in the last five years has been concentrated in MSM populations.

**Syphilis Cases by Time of Diagnosis
Clark County 2008-2012**

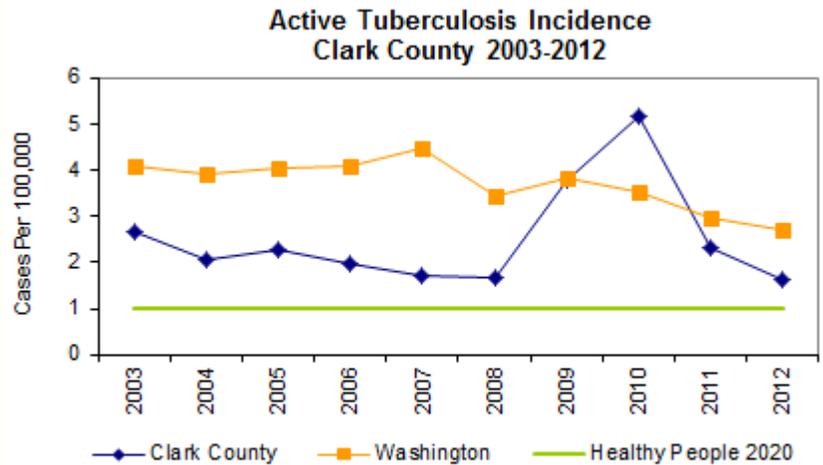


Primary and secondary syphilis represent about half of syphilis cases reported in 2012. We focus on primary and secondary syphilis as they represent recent infections.

Tuberculosis

Key Information:

- Tuberculosis rates have remained stable or declined slightly with the exception of a spike in 2009-10
- Globally, tuberculosis (TB) is a major cause of death and disability, especially in developing countries.
- Tuberculosis is a serious disease that requires extensive treatment.
- In 2012, Clark County and Washington incidence rates were **above** Healthy People 2020 goals



Tuberculosis (TB) is a bacterial disease that most commonly affects the lungs, but can also affect any other part of the body. The infectious agent is from the mycobacterium family of bacteria, which is found primarily in humans. The disease begins with airborne exposure to an infectious human source. From there, the infection can manifest as either active or latent infection. Latent infection is not communicable, has no symptoms, and may be carried lifelong. However, in about 10% of cases, of latent infection will progress to active infection. Active TB occurs primarily in the lungs (pulmonary TB) although a third of cases can develop infection elsewhere in the body. Active pulmonary and laryngeal TB are the only forms of TB to be infectious. TB can be transmitted by exhalation of airborne bacteria produced during coughing, singing, talking or sneezing. Of those progressing to active TB infection, about half do so within the first two years of latent TB infection. Symptoms of active TB include fatigue, fever, weight loss, and night sweats, and can advance to productive coughing and chest pain. Approximately 65% of untreated pulmonary TB cases die within 5 years. Treatment for latent and active TB involves long-term antibiotic treatment therapy. Exposure to multi-drug-resistant TB or insufficient treatment of drug-susceptible TB requires longer term treatment with second line antibiotics.

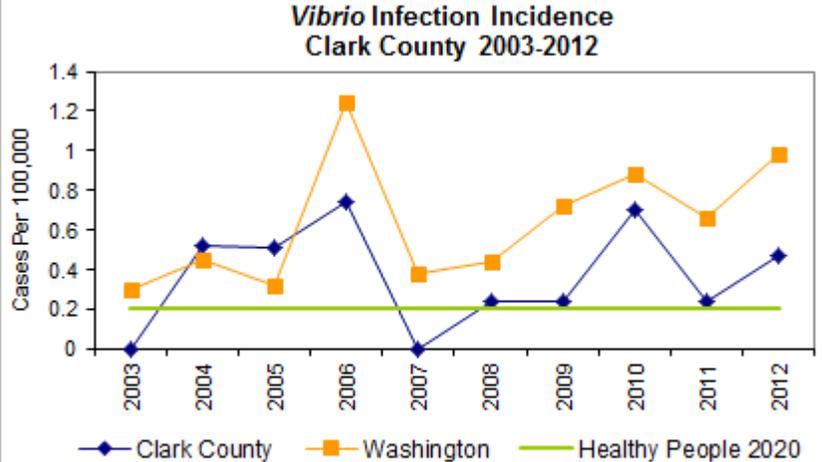
The risk of infection is directly related to the degree of exposure and it generally requires extended contact to become infected. Children under 5 years of age, young adults, the elderly, those in correctional institutions and the immunocompromised are more at risk to progressing to active TB disease. Globally, TB is a leading cause of death. Consistent with national trends, about 60% of tuberculosis cases in Clark County are foreign born. Co-infection with HIV is common and increases the risk of progression to active disease.

In 2012, 7 cases were reported in Clark County. The five year incidence rate is below the average rate for Washington. The rate of infection is slowly decreasing in the United States and in Washington. The Healthy People 2020 goal for TB is an incidence rate of 1.0 cases per 100,000 people, below the current incidence rate.

Vibrio Infections

Key Information:

- **Vibriosis is an uncommon bacterial disease that is primarily caused by eating raw or undercooked seafood**
- **The risk of disease can be reduced by avoiding raw seafood, especially oysters, and avoiding exposure of open wounds to brackish water**
- **The five year incidence rate in Clark County and Washington is **above** the Healthy People 2020 goal**



Vibriosis is caused by the *Vibrio* family of bacteria, excluding *Vibrio cholerae* which causes cholera and is reported separately. Vibriosis symptoms vary by the specific *Vibrio* species. *V.parahaemolyticus*, *V.mimicus*, and non-toxin producing *V.cholerae* cause a diarrheal illness that can include abdominal cramps, bloody diarrhea, vomiting, headache, and fever. *V.alginolyticus* most commonly causes cellulitis and ear infections. *V.vulnificus* causes soft tissue infections, wound infections, and blood infections in persons with compromised immune systems and other chronic conditions. *Vibrio* bacteria naturally inhabit coastal waters and shellfish, especially oysters, and are present in higher concentrations during summer months. Diarrheal illness occurs after consuming raw or undercooked shellfish, while wound and ear infections result from exposure to contaminated seawater. Person-to-person transmission probably does not occur for non-cholera *Vibrios*. The incubation period can range from 5 to 92 hours. Diarrheal vibriosis is usually treated with oral rehydration, but antimicrobial therapy is prescribed for severe symptoms. *V.vulnificus* tissue infections require rapid treatment with appropriate antibiotics.

Prevention techniques include avoiding raw oysters and seafood, especially if you are immunocompromised or have chronic liver disease, adequately cooking seafood, carefully

handling uncooked shellfish, and avoiding exposure of open wounds to warm salt or brackish water.

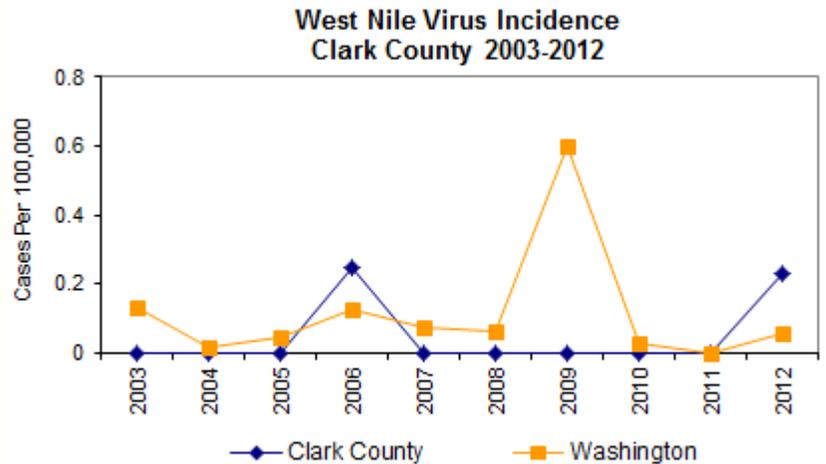
There were 2 cases of Vibriosis reported in Clark County in 2012 and small numbers of cases have been reported in four of the past 5 years. Of these cases, most were exposed to raw or partially cooked oysters and infections were acquired both inside and outside of Washington. A total of 67 cases were reported in Washington in 2012. Although case numbers are low and unstable, generally Clark County incidence is below Washington incidence. Cases were more likely to occur in the summer months and be males aged 30-50. Occasional epidemics of Vibriosis occur, such as a 2006 *V.parahaemolyticus* outbreak that sickened 110 Washington residents.

The Healthy People 2020 goal for *Vibrio* infections is an incidence rate of 0.2 cases per 100,000 population. The 2012 incidence rate in Washington and the five year average rate in Clark County are above this goal.

West Nile Virus

Key Information:

- West Nile Virus is a mosquito-borne disease that recently emerged in the US
- The disease is more common in the summer and fall and usually infects the middle-aged and the elderly
- The best prevention measures are to take measures to avoid mosquito bites, especially when infected mosquitoes are active



West Nile Virus (WNV) is caused by a mosquito-borne *flavivirus* that was first detected in the United States in 1999. The first case of WNV detected in Washington was in 2006. The natural reservoir of WNV is primarily in birds, although other vertebrates can act as reservoirs. Humans are only incidental hosts of the virus. The incubation period ranges from 3-14 days after being bitten by a mosquito. Infected people or animals are not contagious as the disease is transmitted only by mosquito bites. Although up to 80% of infected people show no clinical symptoms, about 20% of cases experience fever, headache, body aches, nausea, vomiting, and sometimes swollen lymph glands or a skin rash on the chest, stomach, and back. In less than 1% of cases, the virus affects the nervous system, which can lead to meningitis, encephalitis, coma, and death. The elderly are the most at risk for severe cases of WNV. WNV infection is closely linked with the life cycles of mosquitoes so nationally more people become infected during the warmer months. There is no specific treatment for WNV.

The risk of WNV can be reduced by taking mosquito control precautions. Draining standing water and inspecting screens on doors and window are important control measures around the house. When spending time outdoors, wear long sleeves to protect skin, apply mosquito repellent, and avoid

being outside during dusk and dawn when mosquitoes are feeding.

There was 1 case of WNV reported in Clark County in 2012. In Washington, the incidence rate has been low and below the national average, likely due to environmental factors. Many, although not all, WNV infections were likely acquired outside of Washington.

Section 3: Summary of Vaccines and Vaccination Rates

Vaccine	Doses Required	Age	Clark County Rate	Washington Rate	Healthy People 2020 Goal	Progress to Goal
Diphtheria, Tetanus, Pertussis (DTaP)	4 doses	19-35 months		84.0%	90%	Below
Diphtheria, Tetanus, Pertussis (DTaP)	4 doses	Kindergarten	87.9%	92.3%	95%	Below
Diphtheria, Tetanus, Pertussis (Tdap)	1 dose	13-17 Years		86.0%	80%*	Above
Hepatitis A	2 doses	19-35 months		51.0%	60%	Below
Hepatitis B	1 dose	Birth		73.2%	85%	Below
Hepatitis B	3 doses	19-35 months		86.3%	90%	Below
Hepatitis B	3 doses	Kindergarten	88.4%	93.3%	95%	Below
Haemophilus Influenzae (Hib)	3 doses	19-35 months		81.0%	90%	Below
Human Papilloma Virus (HPV)	3 doses in females	13-17 Years		43.5%	80%*	Below
Meningococcal Disease	1 dose	13-17 Years		71.2%	80%*	Below
Measles, Mumps Rubella (MMR)	1 dose	19-35 months		84.8%	90%	Below
Measles, Mumps Rubella (MMR)	2 doses	Kindergarten	87.9%	91.7%	95%	Below
Pneumococcal	3 doses	19-35 months		90.6%	90%	Near
Polio	3 doses	19-35 months		89.2%	90%	Near
Polio	3 doses	Kindergarten	88.0%	91.4%	95%	Below
Rotavirus	2 doses	19-35 months		68.6%	80%	Below
Varicella	1 dose	19-35 months		84.5%	90%	Below
Completed Vaccination Series	Appropriate Dosing**	19-35 months		69.3%	80%	Below
Completed Vaccination Series	Appropriate Dosing***	Kindergarten	79.6%	85.6%	80%	Near
Exempt	Any Dose	Kindergarten	6.4%	4.5%	Low	Above

* Healthy People 2020 goals are for those aged 13-15

** 4+ DTaP, 3+ polio, 1 MMR, full series of Hib vaccine, 3+ doses of HepB, and 1+ doses of varicella vaccine.

*** 4+ DTaP, 3+ polio, 2 MMR, 3+ doses HepB, and 2 doses of varicella vaccine



VACCINES REQUIRED FOR SCHOOL ATTENDANCE, GRADES K-12

July 1, 2011 – June 30, 2012

Documentation of all vaccines received must include Month, Day & Year.

VACCINE	Kindergarten	1 st -3 rd Grade	4 th -5 th Grade	6 th Grade	7 th -10 th Grade	11 th -12 th Grade
HEPATITIS B (Hep B) <ul style="list-style-type: none"> Dose 2 \geq4 weeks after dose 1 Dose 3 \geq8 weeks after dose 2 Dose 3 \geq 16 weeks after dose 1 Dose 3 \geq 6 months of age 	Required: 3 doses Acceptable: 2 doses of an adolescent vaccine (Recombinax HB [®]), <u>IF</u> given between ages 11 and 15 AND doses separated by \geq 4 months.					
DIPHTHERIA, TETANUS AND PERTUSSIS (DTaP/DT/Td/Tdap) <ul style="list-style-type: none"> DTaP: for children through age 6. Td: for children on or after the 7th birthday. Tdap: for children on or after the 11th birthday. 	Required: 5 doses <u>AND</u> child got dose 5 on or after the 4 th birthday. Acceptable: 4 doses DTaP/DT <u>IF</u> child got dose 4 on or after the 4 th birthday.	Required: 5 doses <u>AND</u> child got dose 5 on or after the 4 th birthday. Acceptable: <ul style="list-style-type: none"> 4 doses DTaP/DT <u>IF</u> child got dose 4 on or after the 4th birthday. 3 doses diphtheria and tetanus containing vaccines may complete the series for children \geq7 years of age. 	Required: 1 dose Tdap for 6 th -10 th grade <u>IF</u> student is \geq 11 years old <u>AND IF</u> it has been at least 5 years since the last DTaP, DT or Td.			
POLIO (IPV or OPV) <ul style="list-style-type: none"> Not required for students 18 years and older. 	Required: 4 doses, <u>IF</u> child got dose 4 on or after the 4 th birthday AND dose 3 and 4 separated by \geq 6 months.* Acceptable: <ul style="list-style-type: none"> 4 doses before the 4th birthday <u>IF</u> child got all doses before 8/7/2009.* 3 doses <u>IF</u> child got last dose on or after the 4th birthday.* 				Required: 4 doses <u>IF</u> child got all doses before the 4 th birthday. Acceptable: 3 doses <u>IF</u> child got last dose on or after the 4 th birthday.	
MMR (MMR or MMRV)	Required: 2 doses <u>IF</u> child got dose 1 on or after the 1 st birthday AND dose 2 given (4-day grace <u>DOES</u> apply between doses of the same live vaccine such as MMR/MMR or MMRV/MMRV).					
VARICELLA (VAR or MMRV) <ul style="list-style-type: none"> Varicella: must get the same day as MMR <u>OR</u> \geq 28 days apart. (4-day grace <u>DOES NOT</u> apply). 	Required: 2 doses Child must get dose 1 on or after the 1 st birthday AND dose 2 given \geq 3 months later. Acceptable: <ul style="list-style-type: none"> Health care provider verification of disease. \geq28 days between doses. 	Required: 1 dose Child must get dose 1 on or after the 1 st birthday.	Acceptable: Parent-reported history of disease.		Recommended, but not required.	

*National recommendations updated 8/7/09 requiring the 4th dose on or after the 4th birthday. Children who got 3 or 4 valid doses before 8/7/09 do not need an additional dose.

• Acceptable for all vaccines: blood test showing proof of immunity – must have health care provider's signature AND attached lab report(s).

• Valid: vaccine doses given up to 4 days before the minimum age or interval (4 day grace period).

• The 4 day grace period DOES apply between dose 1 and dose 2 of the same live vaccines, such as between MMR and MMR, BUT NOT between MMR and MMRV.

• The 4 day grace period DOES NOT apply between dose 1 and dose 2 of different live vaccines, such as between MMR and Varicella or between MMR and live flu vaccine.

Table 3.3: Healthy People 2020 Immunization Goals

Preventable Disease	Age			
	Vaccine	Birth	Aged 19-35 months	Kindergarten Aged 13-15 Years
Diphtheria, Tetanus, and Pertussis	DTaP		90%, 4 doses	95%, 4 doses
Hepatitis A	Tdap			80%, 1 dose
Hepatitis B		85%, within 3 days	60%, 2 doses 90%, 3 doses	95%, 3 doses
Haemophilus Influenzae (Hib)			90%, 3 doses	
Human Papilloma Virus (HPV)				80%, 3 doses in females
Meningococcal Disease				80%, 1 dose
Measles, Mumps, Rubella			90%, 1 doses	95%, 2 doses
Pneumococcus			90%, 3 doses	
Polio			90%, 3 doses	95%, 3 doses
Rotavirus			80%, 2 doses	
Varicella			90%, 1 doses	95%, 2 doses
Completed Vaccination Series			80%, all doses completed at every time period	
No doses of any vaccine			No specific number, but a small number	

Section 4: Notable Outbreaks and Investigations

Waterborne *Shigella sonnei* Outbreak

July 2012

In July 2012, Clark County Public Health (CCPH) received several laboratory reports of infection with *Shigella sonnei*. All of the cases had gone swimming at Kline Pond. Ultimately CCPH identified 24 total shigellosis cases (4 confirmed, 13 probable, and 7 suspect). Of these cases, 19 were associated with the public swimming area and 5 with childcare facilities that had links to the swimming hole. Some had exposure to both the swimming hole and childcare. The age range of cases was 2-49 and most (63%, 15/24) were children under ten years old. Two cases were hospitalized. Water testing indicated that fecal coliform levels were above EPA action limits for recreational water but no *Shigella* species were isolated. The swimming area re-opened once fecal coliform levels fell below EPA action limits. No new cases were reported after CCPH closed the swimming area.

***Salmonella* Virchow at a Restaurant**

October 2012

In October 2012, Clark County Public Health (CCPH) received several laboratory reports of infection with *Salmonella* Virchow, a serotype not commonly identified in the United States. Upon interview, the cases did not know each other, however all of the cases reported eating at a local restaurant. In response, CCPH inspected the restaurant and found several food handling violations. Special attention was paid to restaurant equipment that was difficult to clean as well as raw food handling practices. Environmental specimens were collected from several pieces of equipment before the restaurant was closed for extensive cleaning. CCPH required bacterial stool testing of all employees prior to returning to work. Local providers and the public were alerted to the outbreak by provider alerts and press releases.

Ultimately CCPH found 122 cases associated with the restaurant (42 confirmed, 80 probable). Of the 41 workers, 6 tested positive, none of whom reported a prior illness. These 6, along with 2 additional workers who tested negative but subsequently became ill, had previously eaten at the restaurant. The serotype of the isolate from the employees was indistinguishable by PFGE from PFGE's done on case specimens. Although no specific food item was implicated and all environmental samples were negative, comparisons between cases and their dining companions indicated elevated risk for eating salsa, guacamole, queso, any appetizer (which includes guacamole and queso), and sour cream. Complicating the investigation, many of these food items were included in multiple dishes and dining companions shared dishes. No further cases of *Salmonella* Virchow have been reported since the restaurant was cleaned and re-opened.

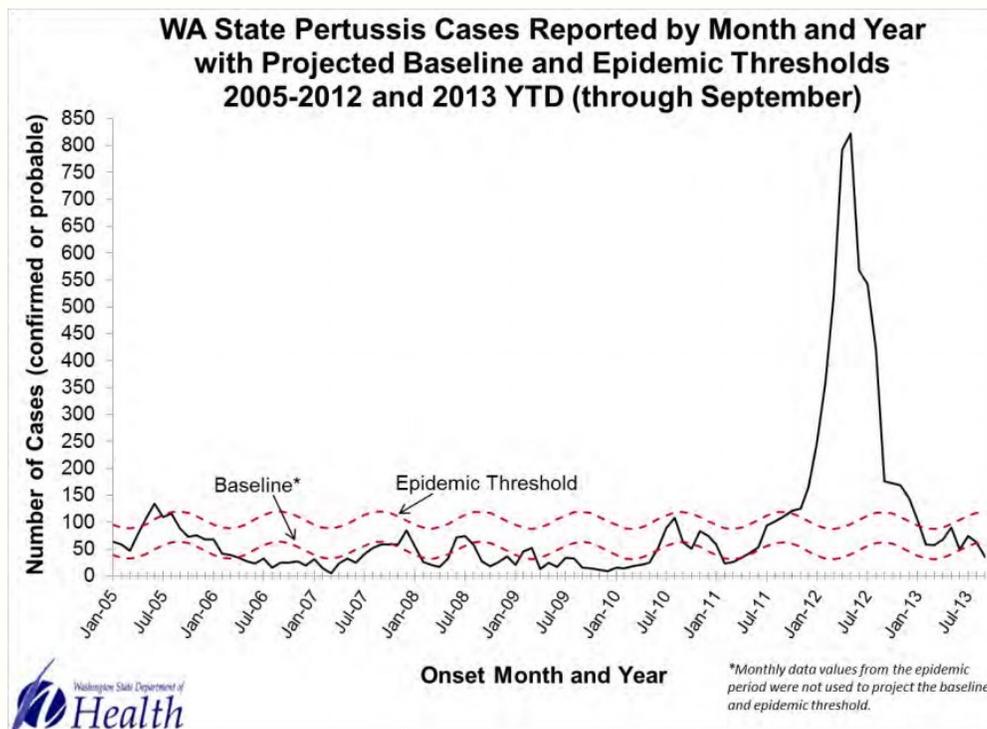
Statewide Pertussis Epidemic

Statewide, Washington saw a marked increase in the number of pertussis cases reported at the end of 2011 and beginning of 2012. In response, the Washington State Secretary of Health declared a statewide pertussis epidemic on April 3, 2012.

4,918 cases were reported statewide in 2012 compared to 965 cases in 2011. County estimates show a similar upward spike in pertussis cases. In 2012, 326 pertussis cases were reported to Clark County Public Health compared to 95 in 2011. This outbreak was the largest seen in Washington since the 1950's.

This epidemic has been largely attributed to waning immunity among children that received only acellular pertussis vaccines as well as decreasing immunization rates in Washington. Whole cell vaccines (DTP) began to be phased out in the 1990's due having more non-serious reactions such as redness, pain, and swelling at the injection site compared to acellular vaccines (DTaP and Tdap). The current DTaP and Tdap vaccines have similar efficacy against pertussis but protection decreases faster over time. At the same time, vaccination rates with pertussis antigen-containing vaccines has decreased, increasing the number of susceptible people.

Since the epidemic, the number of pertussis cases reported to Clark County Public Health has returned to previous baseline numbers. Just as Washington saw an epidemic in 2012 and California saw one in 2010, some other states across the US saw epidemics in 2013. For more information on the Washington pertussis epidemic, see: <http://www.cdc.gov/mmwr/pdf/wk/mm6128.pdf>



Gastrointestinal Illness in Healthcare Facilities

Clark County Public Health responds to multiple reports of acute gastrointestinal illness in healthcare facilities every year. The most common bug causing these illnesses is norovirus, a virus that causes vomiting and diarrhea and is especially contagious. Each year, it causes 19 -21 million illnesses and contributes to 56,000 - 71,000 hospitalizations and 570 - 800 deaths in the US. Norovirus is especially of concern in healthcare settings that care for the elderly such as assisted living facilities, skilled nursing facilities, adult family homes, and nursing homes.

In 2012 Clark County Public Health responded to 17 reports of gastrointestinal outbreaks in such settings. In these instances, Clark County Public Health works with the facility to halt the spread of illness by giving the facility a set of control measures that generally include restrictions on visitation, new admittances, transfers between facilities, dining services, and social events, segregation of staff caring for ill residents, and other measures as needed.

Section 5: 2012—2013 Influenza Summary

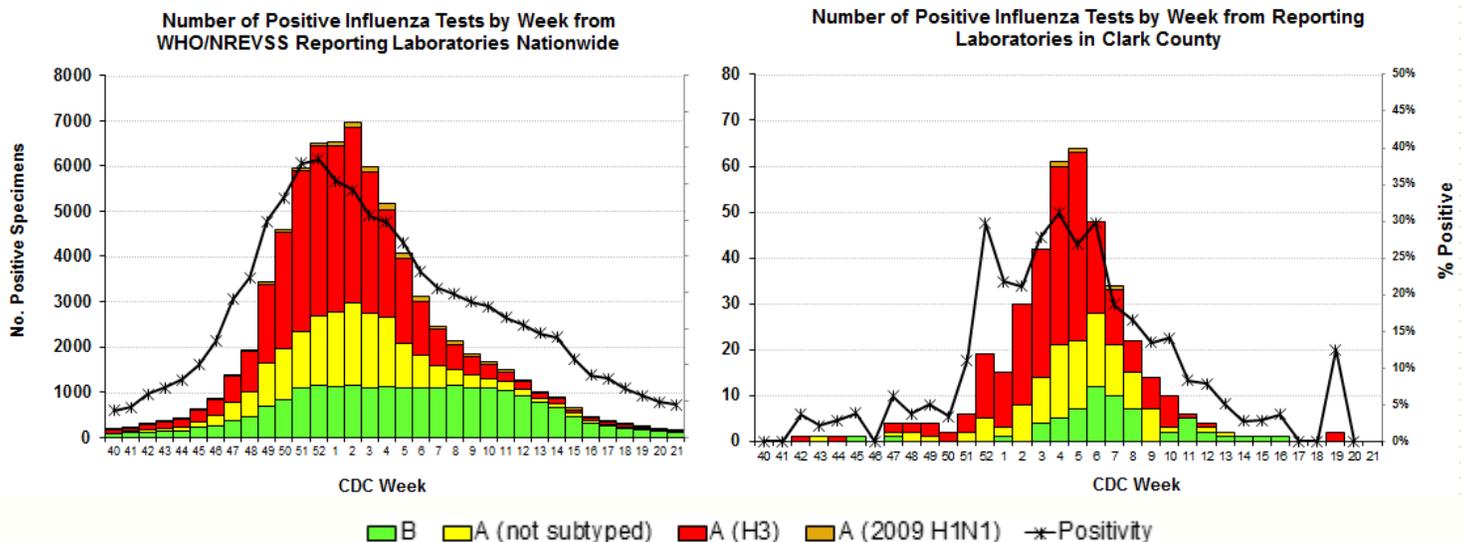
Clark County Public Health, in collaboration with local medical practices, laboratories, the Washington State Department of Health (DOH), and the Centers for Disease Control and Prevention (CDC), performs surveillance for influenza during the 2012-2013 season using several different systems. This report summarizes data collected during the 2012-2013 season.

Overall Summary

Overall, influenza activity during the 2012–2013 influenza season was more severe and occurred earlier than usual, reaching peak activity in Washington in January 2013. The predominant viruses circulating throughout the state were influenza A (H3N2) viruses.

Laboratory Surveillance

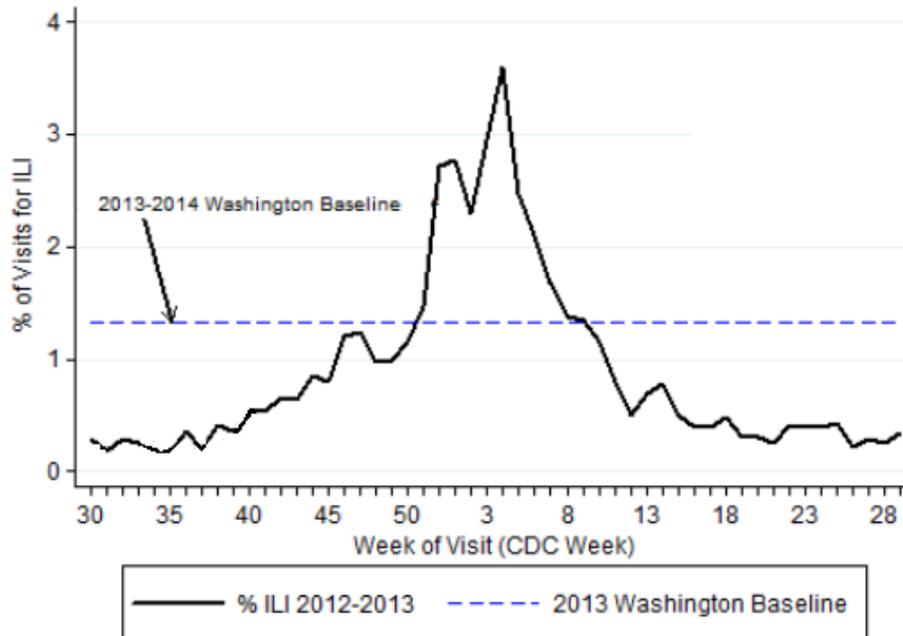
Select laboratories in Washington report the number of influenza tests performed and the number positive for influenza A and influenza B each week. We calculate the percent of influenza tests performed testing positive as “positivity”. Positivity is useful in determining the start and finish of influenza season as it incorporates the number of tests performed as well as the number tests coming back positive. Laboratory data is also useful in determining which subtypes of the virus are circulating and when peak activity is occurring. In the 2012-2013 season, the most common subtype was influenza A (H3N2) and the season peaked in January. No novel influenza A strains (H3N2v, H7N9, H5N1) were found in Washington in the 2012-2013 season.



More in-depth laboratory surveillance is performed at the CDC and DOH to determine whether the circulating strains are a good match to vaccine strains and to determine if the circulating strains are resistant to the two most common influenza antivirals (the neuraminidase inhibitors oseltamivir and zanamivir). No antiviral resistant strains were detected in Washington during the season.

Syndromic (influenza-like-illness) Surveillance

Select medical providers in Washington report the number of people presenting to the medical provider with the chief complaint being “influenza” OR having fever (temp >100F) with either cough or sore throat. Combined with the total number of patients seen by the medical provider, we can calculate the percent of patients presenting with an “influenza-like-illness” or ILI. In the 2012-2013 season, ILI activity peaked in January alongside at roughly the same time as laboratory indicators.



Influenza Vaccine and Vaccine Match

The 2012-2013 influenza vaccine includes 3 strains of influenza: influenza A (H1N1), influenza A (H3N2), and influenza B (Yamagata lineage) strain.

In the 2012-2013 season, CDC antigenically characterized 2452 influenza viruses [252 influenza A (H1N1) viruses, 1324 influenza A (H3N2) viruses, and 876 influenza B viruses] collected by U.S. laboratories. The influenza A strains are very good matches while the influenza B strain is a fair match to circulating viruses.

Influenza A (2009 H1N1) [vaccine strain: A/California/7/2009]

- 249 (98.8%) 2009 H1N1 viruses tested were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2012-2013 influenza vaccine for the Northern Hemisphere.
- 3 (1.4%) of the 2009 H1N1 viruses tested showed reduced protection against influenza A California/7/2009

Influenza A (H3N2) [vaccine strain: A/Victoria/36/2011]

- 1319 (99.6%) H3N2 influenza viruses tested have been characterized as A/Victoria/361/2011-like, the influenza A (H3N2) component of the 2012-2013 Northern Hemisphere influenza vaccine.
- 5 (0.4%) H3N2 viruses tested showed reduced protection against A/Victoria/361/2011.

Influenza B [vaccine strain B/Wisconsin/1/2010 (Yamagata lineage)]

- 581 (66.3%) influenza B viruses tested so far this season have been characterized as B/Wisconsin/1/2010-like (Yamagata lineage), the influenza B component of the 2012-2013 Northern Hemisphere influenza vaccine.
- 295 (33.7%) influenza B viruses tested have been from the B/Victoria lineage of viruses.

Source Material and Additional Online Resources

Clark County Public Health relies on the expertise of the Centers for Disease Control and Prevention (CDC) and Washington State Department of Health (DOH). In addition to being useful online references, the CDC and DOH websites are the primary sources of the information contained in this report.

Centers for Disease Control and Prevention <http://www.cdc.gov/>

Washington State Department of Health <http://www.doh.wa.gov/>

For a print resource on communicable diseases, see the Control of Communicable Diseases Manual, 19th Edition, edited by David L. Heymann Washington, DC: American Public Health Association, 2008.

For a comprehensive resource on vaccine-preventable diseases in the United States, see Epidemiology and Prevention of Vaccine-Preventable Diseases. Centers for Disease Control and Prevention. Atkinson W, Wolfe S, Hamborsky J, eds. 12th ed. Washington DC: Public Health Foundation 2012. Also available online at: <http://www.cdc.gov/vaccines/pubs/pinkbook/index.html>

More information on topics covered in this report are available online at:

Clark County Public Health <http://www.clark.wa.gov/public-health/>

Weekly influenza reports during the influenza season (usually October - May): <http://www.clark.wa.gov/public-health/diseases/flu.html>

Other Clark County Public Health Fact Sheets and Reports <http://www.clark.wa.gov/public-health/reports/facts.html>

Washington State Department of Health Communicable Disease Reports <http://www.doh.wa.gov/DataandStatisticalReports.aspx>

Washington State Department of Health List of Notifiable Conditions <http://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/NotifiableConditions/ListofNotifiableConditions.aspx>

Oregon Health Authority, Public Health Division, Surveillance Data <http://public.health.oregon.gov/DiseasesConditions/CommunicableDisease/DiseaseSurveillanceData/Pages/index.aspx>

Centers for Disease Control and Prevention Immunization Schedules <http://www.cdc.gov/vaccines/schedules/>

Healthy People 2020 Goals <http://www.healthypeople.gov/2020/>

Washington State Office of Financial Management (for population estimates) <http://www.ofm.wa.gov/pop/default.asp>

Clark County Public Health Department Contacts

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Communicable Disease, Immunizations and Tuberculosis	(360) 397-8182
Foodborne Illness Complaint Line	(360) 397-8083

This report is available online at:

<http://www.clark.wa.gov/public-health/reports/>

For other information or to request the report in an alternate format, please contact:

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