Washington State
COMMUNICABLE DISEASE REPORT 2015

Washington State Department of Health

"Public health - always working for a safer and healthier Washington."

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Shoreline, WA 98155
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WASHINGTON STATE DEPARTMENT OF HEALTH
Disease Control and Health Statistics
Communicable Disease Epidemiology
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COMMUNICABLE DISEASE REPORT 2015

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This report represents Washington State communicable disease surveillance: the ongoing collection, analysis and dissemination of morbidity and mortality data to prevent and control communicable disease. In addition to the contributors listed on the previous page, we would like to recognize the staff of the Washington State Public Health Laboratories, the staff of Washington's local health jurisdictions who contribute to surveillance, investigation, and prevention of communicable diseases in our state, and the thousands of people in clinics, hospitals and clinical laboratories throughout Washington whose disease reports constitute the basis for this document.

Table of Contents

Tables

Executive Summary – 2015

This report summarizes notifiable communicable diseases reported by local health jurisdictions to the Department of Health (DOH) in 2015. The most common case reports continued to be sexually transmitted conditions, chronic hepatitis, infections caused by enteric pathogens, pertussis, and tuberculosis.

Technical Notes

Washington Administrative Code (WAC) Chapters 246-100 and 246-101 outline disease surveillance requirements: healthcare providers and facilities, laboratories, veterinarians, food service establishments, childcare facilities and schools must report certain notifiable conditions including communicable diseases to the local health jurisdiction or DOH. Local health jurisdictions report to DOH electronically via the Public Health Issue Management System (PHIMS).

Cases of communicable notifiable conditions were included in this annual report if they met the following criteria (these criteria do not apply to HIV, chronic hepatitis, sexually transmitted diseases, or tuberculosis):

1. Resident of Washington.
2. Onset dates during the 2015 CDC Year (January 4, 2015 – January 2, 2016).
3. Case report entered into PHIMS by March 1, 2016 if the condition is common (>10 cases per year).
4. Reported to DOH through PHIMS prior to May 15, 2016 if the condition is rare (≤10 cases per year).
5. Given a valid DOH case classification by DOH (as described in the guidelines for each condition: http://www.doh.wa.gov/PublicHealthandHealthcareProviders/NotifiableConditions/ListofNotifiableConditions.aspx).
6. In addition, the report includes very rare conditions (zero to two cases per year) reported to DOH after the previous year's deadline (if not reported in a previous annual report).

Depending on the condition, it is likely only a fraction of the actual number of cases will be reported to a surveillance system. Case patients may not be aware of being infected, are symptomatic but do not contact a health care provider, are not confirmed with appropriate tests, or are not reported after the diagnostic testing.

Disease summary tables in Appendix I reflect historical years when data are reliable. Population estimates used in rate calculations come from the Washington State Office of Financial Management: http://www.ofm.wa.gov/pop/asr/default.asp. Previously reported disease rates for 2000 through 2010 were updated using new population estimates based on the 2010 decennial census. Rates are not provided for fewer than five cases and are not age-adjusted due to the small numbers of cases for almost all conditions.

This report is available online at:
http://www.doh.wa.gov/DataandStatisticalReports/DiseasesandChronicConditions/CommunicableDiseaseSurveillanceData/AnnualCDSurveillanceReports

Monthly Washington State disease surveillance data are available online at:
http://www.doh.wa.gov/DataandStatisticalReports/DiseasesandChronicConditions/CommunicableDiseaseSurveillanceData/MonthlyCDSurveillanceReport.aspx.

Additional information on communicable disease surveillance and case investigation in Washington is available at:
http://www.doh.wa.gov/PublicHealthandHealthcareProviders/NotifiableConditions/ListofNotifiableConditions.aspx.

For other information or to request the report in an alternate format, contact:
Washington State Department of Health
Communicable Disease Epidemiology
1610 NE 150th Street, MS K17-9
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206-418-5500

Reporting a Notifiable Condition

In accordance with Washington State rule (http://www.doh.wa.gov/PublicHealthandHealthcareProviders/NotifiableConditions.aspx), public health and health care professionals should report most notifiable conditions to the local health jurisdiction in the county of the patient's residence. Disease reporting telephone numbers for each local health jurisdiction are provided at http://www.doh.wa.gov/Portals/1/Documents/1200/LHJCommunicableDiseaseReporting.pdf. If no one is available at the local health jurisdiction and a condition is immediately notifiable or is notifiable to DOH, please call the 24-hour reporting line: 877-539-4344 or 206-418-5500. For a complete list of notifiable conditions for health care providers, hospitals, laboratories and veterinarians, please refer to http://www.doh.wa.gov/PublicHealthandHealthcareProviders/NotifiableConditions/HowToReport.aspx

Washington State Department of Health

Notifiable Conditions Reporting

HEALTH CARE PROVIDERS

Notifiable to the local health jurisdiction (LHJ) of the patient's residence

Phone numbers by LHJ are listed on the other side of this poster. If unable to reach the LHJ of the patient's residence, please call: **1-877-539-4344**

IMMEDIATELY NOTIFIABLE: Requires a phone call to reach a live person at the local health jurisdiction, 24/7

Must be reported as soon as clinically suspected

Animal bites, when human exposure to rabies is suspected
Anthrax
Botulism (foodborne, wound and infant)
***Burkholderia mallei* (glanders) and *pseudomallei* (melioidosis)**
Cholera
Diphtheria
Disease of suspected bioterrorism origin
Domoic acid poisoning (amnesic shellfish poisoning)
***E. coli* – refer to "Shiga toxin-producing *E. coli* infections"**
Emerging condition with outbreak potential
***Haemophilus influenzae* (invasive disease, children <5 years)**
Influenza, novel or unsubtypable strain
Measles (rubeola), acute
Meningococcal disease (invasive)
Monkeypox
Outbreaks of suspected foodborne origin
Outbreaks of suspected waterborne origin
Paralytic shellfish poisoning
Pesticide poisoning—hospitalized, fatal, or cluster: 1-800-222-1222
Plague
Poliomyelitis
Rabies, confirmed human or animal
Rabies, suspected human exposure
Rubella (include congenital rubella syndrome), acute
SARS (Severe Acute Respiratory Syndrome)
Shiga toxin-producing *E. coli* infections (STEC, including but not limited to *E. coli* O157:H7; also includes post-diarrheal hemolytic uremic syndrome)
Smallpox
Tuberculosis
Tularemia
Vaccinia transmission
Viral hemorrhagic fever
Yellow fever

Notifiable on a monthly basis

Asthma, occupational (suspected or confirmed): **1-888-66-SHARP**

Birth defects: **360-236-3533**
(autism spectrum disorders, cerebral palsy, alcohol-related birth defects)

Hepatitis B, chronic (initial diagnosis/previously unreported cases)

Hepatitis C, chronic

The conditions listed above are notifiable to public health authorities in accordance with WAC 246-101.

- Report to the local health jurisdiction of the patient's residence within the timeframe indicated (except for conditions followed by a reporting phone number).
- 'Other rare diseases of public health significance' means a disease or condition, of general or international public health concern, which is occasionally or not ordinarily seen in the state of Washington including, but not limited to, spotted fever rickettsiosis, babesiosis, tick paralysis, anaplasmosis, and other tick borne diseases. This also includes public health events of international concern and communicable diseases that would be of general public concern if detected in Washington.

Notifiable within 24 hours: Requires a phone call if reporting after normal public health business hours

Brucellosis
Hantavirus pulmonary syndrome
Hepatitis A, acute
Hepatitis B, acute
Hepatitis E, acute
Legionellosis
Leptospirosis
Listeriosis
Mumps, acute
Pertussis
Psittacosis
Q fever
Relapsing fever (borreliosis)
Salmonellosis
Shigellosis
Vancomycin-resistant *Staphylococcus aureus* (not to include Vancomycin-intermediate)
Vibriosis
Yersiniosis

Other rare diseases of public health significance, including but not limited to:

- Amoebic meningitis
- Anaplasmosis
- Babesiosis
- Carbepenemase-producing carbepenem-resistant Enterobacteriaceae (CP-CRE)
- Chagas disease
- Coccidioidomycosis
- *Cryptococcus gattii*
- Ehrlichiosis
- Histoplasmosis
- Shellfish poisoning (diarrhetic)
- Tickborne rickettsioses (including Rocky Mountain spotted fever)
- Tick paralysis
- Typhus

Unexplained critical illness and death

3 Notifiable within 3 business days

Acquired immunodeficiency syndrome (AIDS), including in persons previously reported with HIV infection
Arboviral disease (acute disease only, including: West Nile virus, dengue, eastern & western equine encephalitis, Zika, etc.)
Campylobacteriosis
Chancroid
Chlamydia trachomatis infection
Cryptosporidiosis
Cyclosporiasis
Giardiasis
Gonorrhea
Granuloma inguinale
Hepatitis B, surface antigen positive pregnant women
Hepatitis C, acute
Hepatitis D, acute and chronic
Herpes simplex, neonatal and genital (initial infection only)
HIV infection
Immunization reactions (severe, adverse)
Influenza-associated death, laboratory-confirmed
Lyme disease
Lymphogranuloma venereum
Malaria
Pesticide poisoning—non-hospitalized, non-fatal, non-cluster: **1-800-222-1222**
Prion disease, including Creutzfeldt-Jakob disease (CJD)
Syphilis (including congenital)
Tetanus
Trichinosis
Varicella-associated death

Washington State Department of Health

Notifiable Conditions Reporting

HEALTH CARE FACILITIES

Notifiable to the local health jurisdiction (LHJ) of the patient's residence

Phone numbers by LHJ are listed on the other side of this poster. If unable to reach the LHJ of the patient's residence, please call: **1-877-539-4344**

IMMEDIATELY NOTIFIABLE: Requires a phone call to reach a live person at the local health jurisdiction, 24/7

Must be reported as soon as clinically suspected

Animal bites, when human exposure to rabies is suspected
Anthrax
Botulism (foodborne, infant, and wound)
***Burkholderia mallei* (glanders) and *pseudomallei* (melioidosis)**
Cholera
Diphtheria
Disease of suspected bioterrorism origin
Domoic acid poisoning (amnesic shellfish poisoning)
***E. coli* – refer to "Shiga toxin-producing *E. coli* infections"**
Emerging condition with outbreak potential
***Haemophilus influenzae* (invasive disease, children < 5 years)**
Influenza, novel or unsubtypable strain
Measles (rubeola), acute
Meningococcal disease (invasive)
Monkeypox
Outbreaks of disease that occur or are treated in the health care facility
Outbreaks of suspected foodborne origin
Outbreaks of suspected waterborne origin
Paralytic shellfish poisoning
Pesticide poisoning (hospitalized, fatal, or cluster): 1-800-222-1222
Plague
Poliomyelitis
Rabies, confirmed human or animal
Rabies, suspected human exposure
Rubella (include congenital rubella syndrome), acute
SARS (Severe Acute Respiratory Syndrome)
Shiga toxin-producing *E. coli* infections (STEC, including but not limited to *E. coli* O157:H7; also includes post-diarrheal hemolytic uremic syndrome)
Smallpox
Tuberculosis
Tularemia
Vaccinia transmission
Viral hemorrhagic fever
Yellow fever

Notifiable on a monthly basis

Asthma, occupational (suspected or confirmed): **1-888-66SHARP**

Birth defects: **360-236-3533**
(abdominal wall defects, autism spectrum disorders, cerebral palsy, Down syndrome, alcohol-related birth defects, hypospadias, limb reductions, neural tube defects, oral clefts)

Cancer, see WAC 246-430

Gunshot wounds: **360-236-2867**

Hepatitis B, chronic (initial diagnosis/previously unreported cases)

Hepatitis C, chronic

The conditions listed above are notifiable to public health authorities in accordance with WAC 246-101. When a condition occurs in or is treated by the health care facility:

- Report to the local health jurisdiction of the patient's residence within the timeframe indicated (except for conditions followed by a reporting phone number).
- 'Other rare diseases of public health significance' means a disease or condition, of general or international public health concern, which is occasionally or not ordinarily seen in the state of Washington including, but not limited to, spotted fever rickettsiosis, babesiosis, tick paralysis, anaplasmosis, and other tick borne diseases. This also includes public health events of international concern and communicable diseases that would be of general public concern if detected in Washington.

Notifiable within 24 hours: Requires a phone call if reporting after normal public health business hours

Brucellosis
Hantavirus pulmonary syndrome
Hepatitis A, acute
Hepatitis B, acute
Hepatitis E, acute
Legionellosis
Leptospirosis
Listeriosis
Mumps, acute
Pertussis
Psittacosis
Q fever
Relapsing fever (borreliosis)
Salmonellosis
Shigellosis
Vancomycin-resistant *Staphylococcus aureus* (not to include Vancomycin-intermediate)
Vibriosis
Yersiniosis

Other rare diseases of public health significance, including but not limited to:

- Amoebic meningitis
- Anaplasmosis
- Babesiosis
- Carbepenemase-producing carbepenem-resistant Enterobacteriaceae (CP-CRE)
- Chagas disease
- Coccidioidomycosis
- *Cryptococcus gattii*
- Ehrlichiosis
- Histoplasmosis
- Shellfish poisoning (diarrhetic)
- Tickborne rickettsioses (including Rocky Mountain spotted fever)
- Tick paralysis
- Typhus

Unexplained critical illness or death

3 Notifiable within 3 business days

Acquired immunodeficiency syndrome (AIDS), including in persons previously reported with HIV infection
Arboviral disease (acute disease only, including: West Nile virus, dengue, eastern & western equine encephalitis, Zika, etc.)
Campylobacteriosis
Chancroid
Chlamydia trachomatis
Cryptosporidiosis
Cyclosporiasis
Giardiasis
Gonorrhea
Granuloma inguinale
Hepatitis B, surface antigen positive pregnant women
Hepatitis C, acute
Hepatitis D, acute and chronic
HIV infection
Immunization reactions (severe, adverse)
Influenza-associated death, laboratory-confirmed
Lyme disease
Lymphogranuloma venereum
Malaria
Pesticide poisoning—non-hospitalized, non-fatal, non-cluster: **1-800-222-1222**
Prion disease, including Creutzfeldt-Jakob disease (CJD)
Serious adverse reactions to immunizations
Syphilis, including congenital
Tetanus
Trichinosis
Varicella-associated death

Hospital laboratories, refer to the *Laboratories Notifiable Conditions Poster.*

Washington State Department of Health

Notifiable Conditions Reporting

LABORATORIES

Notifiable to the local health jurisdiction (LHJ) of the patient's residence

Phone numbers by LHJ are listed on the other side of this poster. If unable to reach the LHJ of the patient's residence, please call: **1-877-539-4344**

(If patient residence is unknown, notify the LHJ of the health care provider that ordered the diagnostic test)

BACTERIA

- *Bacillus anthracis* (anthrax)
- *Bordetella pertussis* (pertussis)
- 2 *Borrelia burgdorferi* (Lyme disease)
- *Borrelia hermsii* or *B. recurrentis* (Relapsing fever, tick- or louseborne)
- *Brucella* species (brucellosis)
- *Burkholderia mallei* and *B. pseudomallei*
- 2 *Campylobacter* species (campylobacteriosis)
- *Chlamydia (chlamydophila) psittaci* (psittacosis)
- 2 *Chlamydia trachomatis*
- *Clostridium botulinum* (botulism)
- *Corynebacterium diphtheriae* (diphtheria)
- *Coxiella burnetii* (Q fever)
- *E. coli (refer to* "Shiga toxin-producing *E. coli")*
- *Francisella tularensis* (tularemia)
- *Haemophilus influenzae* (children < 5 years)
- *Legionella* species (legionellosis)
- *Leptospira* species (leptospirosis)
- *Listeria monocytogenes* (listeriosis)
- 2 *Neisseria gonorrhoeae* (gonorrhea)
- *Neisseria meningitidis* (meningococcal disease)
- *Salmonella* species (salmonellosis, typhoid fever)
- Shiga toxin-producing *E. coli (*STEC, including but not limited to *E. coli O*157:H7)
- *Shigella* species (shigellosis)
- 2 *Treponema pallidum* (syphilis)
- Vancomycin-resistant *Staphylococcus aureus*
- *Vibrio cholerae* O1 or O139 (cholera)
- *Vibrio* species (vibriosis)
- *Yersinia enterocolitica* or *Y. pseudotuberculosis*
- *Yersinia pestis* (plague)

FUNGI

- 2 *Cryptococcus,* non-*neoformans*

PARASITES

- 2 *Cryptosporidium* (cryptosporidiosis)
- 2 *Cyclospora cayetanensis* (cyclosporiasis)
- 2 *Giardia lamblia* (giardiasis)
- 2 *Plasmodium* species (malaria)
- 2 *Trichinella* species (trichinellosis)

VIRUSES

- 2 Arboviruses, acute, by viral isolation or IgM or PCR positivity (West Nile virus, eastern and western equine encephalitis, dengue, St. Louis encephalitis, La Crosse encephalitis, Japanese encephalitis, Powassan, chikungunya, Zika*)
  *both positive and negative results are requested for Zika
- Coronavirus (SARS-associated)
- Hantavirus
- Hepatitis A virus, acute, by IgM positivity (include hepatocellular enzyme levels in report)
- Hepatitis B virus, acute, by IgM positivity
- Hepatitis B virus: HBsAg, HBeAg, and HBV DNA
- Hepatitis C virus
- 2 Hepatitis D virus
- Hepatitis E virus
- Influenza virus, novel or unsubtypable strain
- Measles virus (rubeola), acute, by IgM or PCR positivity
- Mumps virus, acute, by IgM or PCR positivity
- Poliovirus, acute, by IgM or PCR positivity
- Rabies virus (human or animal)
- Variola virus (smallpox)
- Viral hemorrhagic fever
  Arenaviruses, bunyaviruses, filoviruses, flaviviruses
- Yellow fever virus

*Reportable as rare diseases of public health significance**

- *Coccidioides*
- 2 Carbapenem-resistant Enterobacteriaceae (CRE), resistant to ≥1 carbapenem, using M100-S25 CLSI breakpoints

Notifiable to the Department of Health (DOH)

- 2 LEAD Blood lead level (elevated)
- LEAD Blood lead level (non-elevated)
- ID CD4 + (T4) lymphocyte counts and/or CD4 + (T4) (patients aged 13 and older)
- 2 ID Human immunodeficiency virus (HIV) infection (for example, positive Western Blot, p24 antigen, or viral culture tests)
- ID Human immunodeficiency virus (HIV) infection (all viral load detection test results—detectable and undetectable)
- 2 TB *Mycobacterium tuberculosis* (tuberculosis)

LEGEND

- Immediately notifiable—requires a phone call to reach a live person at the LHJ, 24/7
- Notifiable within 24 hours: Requires phone call if reporting after normal business hours
- 2 Notifiable within 2 business days
- Notifiable on a monthly basis
- Specimen/culture submission to the Public Health Laboratories required (upon request for all others)
- LEAD Notifiable to the DOH Lead Program
  Contact phone: 360-236-4280
- ID Notifiable to the DOH Office of Infectious Disease
  Contact phone: 360-236-3464
- TB Notifiable to the DOH Tuberculosis Program
  Contact phone: 360-236-3397
  Fax: 360-236-3405
- Antibiotic sensitivity testing (first isolates only)

Icons for reporting timeframes and recipients are explained in the legend.

*The 2011 revision of WAC 246-101-010 states "'Other rare diseases of public health significance' means a disease or condition, of general or international public health concern, which is occasionally or not ordinarily seen in the state of Washington including, but not limited to, spotted fever rickettsiosis, babesiosis, tick paralysis, anaplasmosis, and other tick borne diseases. This also includes public health events of international concern and communicable diseases that would be of public concern if detected in Washington."

The laboratory results listed above (preliminary or confirmed) are notifiable to public health authorities in Washington in accordance with WAC 246-101.

Information provided with public health notifications and specimen submissions must include: specimen type; name and telephone number of laboratory; date specimen collected and received; requesting health care provider's name and phone number; test result; and name of patient. Also required when available in the lab database are: patient sex, date of birth or age, full patient address (zip code at a minimum), and health care provider address.

Per WAC 246-101-201(3), LHJs may request laboratory reporting of additional test results pertinent to an investigation of a notifiable condition.

Notifiable Conditions & the Veterinarian

Washington State Department of Health

Veterinarians, including those working in private practices, laboratories, academic settings, zoos, wildlife centers, animal shelters and government agencies, have an important public health role in the identification and control of zoonotic and vector-borne diseases.

The Washington State Administrative Code (WAC 246-101-405) outlines these responsibilities for veterinarians:

A. Notify the local health officer of the jurisdiction in which the human resides of any suspected human case or suspected human outbreak based on the human's exposure to a confirmed animal case of any disease listed in Table

B. Cooperate with public health authorities in the investigation of cases, suspected cases, outbreaks, and suspected outbreaks of zoonotic disease.

C. Cooperate with public health authorities in the implementation of infection control measures including isolation and quarantine.

D. Comply with requirements in chapter 16-70 WAC for submitting positive specimens and isolates for specific diseases, and provide information requested by the Washington State Department of Health or local health jurisdiction.

Notifiable Condition (report suspected human cases)	Report Immediately	Report within 24 hours
Anthrax	X	
Arboviral disease		X
Brucellosis (*Brucella* species)		X
Burkholderia mallei (Glanders)	X	
Disease of suspected bioterrorism origin (including but not limited to anthrax)	X	
E. coli – Refer to "Shiga toxin-producing *E. coli*"	X	
Emerging condition with outbreak potential	X	
Influenza virus, novel or unsubtypable strain	X	
Leptospirosis		X
Plague	X	
Psittacosis		X
Q Fever		X
Rabies (suspected human case or exposure or animal case)	X	
Shiga toxin-producing *E. coli* infections (enterohemorrhagic *E. coli* including, but not limited to, *E. coli* O157:H7)	X	
Tularemia	X	

IMPORTANT NOTE: Selected animal diseases, especially in livestock and poultry, must be reported to the Washington State Department of Agriculture, State Veterinarian's Office. These include eradicated diseases (e.g., tuberculosis, brucellosis), suspected foreign animal diseases (e.g., foot and mouth disease, exotic Newcastle disease, hog cholera) and certain domestic diseases (e.g., anthrax, rabies). See: http://app.leg.wa.gov/WAC/default.aspx?cite=16-70.

*A list of local health departments can be found at http://www.doh.wa.gov/AboutUs/PublicHealthSystem/LocalHealthJurisdictions.aspx.

Communicable Disease Summary

Arboviral Disease

Cause: Various viruses transmitted by arthropods. Arthropod-borne viral (arboviral) diseases include West Nile virus disease and yellow fever (both discussed separately below), chikungunya virus disease, Colorado tick fever, dengue fever, eastern and western equine encephalitis, St. Louis encephalitis, Japanese encephalitis, Zika virus disease and others.

Illness and treatment: There are four main clinical forms: central nervous system (CNS) illnesses; fevers of short duration with or without rash; hemorrhagic fevers; and polyarthritis and rash with or without fevers. Zika virus can cause birth defects. Treatment is supportive.

Sources: Transmission is most commonly by the bite of arthropods (e.g., mosquitoes, sandflies, ticks). Rare transmission occurs through blood transfusions or organ transplantations. Zika virus can be sexually transmitted from symptomatic or asymptomatic persons.

Prevention: Avoid arthropod bites by wearing appropriate clothing and using insect repellents. If traveling to risk areas, consult with a travel clinic or the CDC Travelers' Health website regarding additional measures, including vaccination for Japanese encephalitis or yellow fever and prevention of sexually transmitted Zika virus.

Recent Washington trends: Prior to 2013, ten to 20 cases of travel-associated dengue and a few travel-associated chikungunya cases were reported annually. In late 2013, the first local transmission of chikungunya virus was identified in the Caribbean; widespread local transmission has now been identified in many countries in Central and South America. In 2015, a Zika outbreak began in Brazil and quickly spread to many countries in South and Central America, the Caribbean, and the South Pacific. Increased testing for Zika virus disease due to concerns about birth defects likely led to increased detections of chikungunya and dengue. The circulation of multiple flaviviruses and their cross-reactivity on serologic testing led to inability to distinguish virus types in some cases. Rare reports of other travel-associated arboviral diseases include Colorado tick fever and Japanese encephalitis in 2008, and St. Louis encephalitis and Toscana virus in 2009. Other than West Nile virus, the last reported human arboviral infection acquired in the state was western equine encephalitis in 1988. St. Louis encephalitis infections occurred in the past, primarily east of the Cascade Mountains.

2015: Nineteen cases of dengue fever, 40 cases of chikungunya, and one case of unspecified flavivirus disease were reported following travel.

West Nile Virus (WNV) Disease

Cause: West Nile virus.

Illness and treatment: About 80 percent of those infected are asymptomatic, around 20 percent have WNV fever (fever, headache, rash), and less than 1 percent develop WNV neuroinvasive disease (meningitis, encephalitis, paralysis). Treatment is supportive.

Sources: Many bird species are reservoirs. Mosquitoes are the vectors, transmitting the virus through bites to humans and other mammals such as horses. WNV can be transfused, so donated blood is screened and presumptive viremic donors are reported as possible cases.

Prevention: Avoid mosquito bites by wearing appropriate clothing and using insect repellents. Make sure windows and doors are "bug tight." Maintain window screens. Eliminate breeding sites by draining standing water such as in pots or tires.

Recent Washington trends: Infected birds and horses were first detected in 2002. The first locally acquired human infections were reported in 2006. In 2009, Washington had the highest number of cases to date with 38 cases and two presumptive viremic donors. Of these cases, 36

were known to be endemically acquired within Washington. In 2015, Washington had the second most severe season on record, with 24 cases and eight presumptive viremic donors.

2015: Twenty-four cases were reported; 22 with in-state exposure and two travel-associated cases. Eight asymptomatic viremic blood donors with in-state exposure were also reported.

Yellow Fever

Cause: Yellow fever virus.

Illness and treatment: Early symptoms include fever, headache, muscle aches, and vomiting. Later signs include jaundice, gum bleeding, and bloody vomit in addition to liver and kidney failure. Twenty to 50 percent of jaundiced cases are fatal. Treatment is supportive.

Sources: Yellow fever occurs in tropical areas of Africa and South America. Transmission is by the bite of an infected mosquito. There are two transmission cycles, a jungle cycle involving non-human primates and an urban cycle involving humans.

Prevention: When in endemic countries, avoid mosquito bites by wearing appropriate clothing, using insect repellents, using bed nets, and making sure windows and doors are "bug tight." Consult with a travel clinic or the CDC Travelers' Health website for recommendations about vaccination.

Recent Washington trends: No cases, with the exception of a vaccine-associated infection in 2002, have been reported in over 50 years of surveillance.

2015: No cases were reported.

Botulism

Cause: Bacterial toxin from *Clostridium botulinum*, mainly types A, B, and E.

Illness and treatment: Forms are foodborne botulism (ingested toxin), wound botulism (toxin production in an infected wound), infant botulism (toxin produced in the intestine of a child under a year of age), adult colonization botulism (toxin produced in the intestine of an adult), and inhalational botulism (inhaling toxin, which does not happen naturally). Paralysis starts with facial muscles and often progresses to involve the breathing muscles. Infants may have a weak cry, difficulty feeding leading to weight loss, and weakness. Treatment is supportive care plus either human-derived botulism hyperimmune globulin (BIG-IV) for infants or botulism antitoxin for older children and adults. In addition, antibiotics are given for wound botulism.

Sources: *C. botulinum* spores are common in soil. No consistent exposure is known for infants. Most foodborne cases are due to inadequately processed home-canned foods. Wound botulism is usually associated with injecting black-tar heroin injection into the skin ("skin popping") or muscle, or sometimes with deep contaminated injuries.

Additional risks: Infant botulism cases usually occur in babies under three months old (almost always under six months), both breast fed and formula fed.

Prevention: Follow safe home canning procedures. Boil risky home-canned foods (i.e., low acidic, non-pickled foods) before consumption. Clean any deep puncture wounds promptly.

Recent Washington trends: Each year there are zero to four reports of foodborne botulism, zero to nine reports of infant botulism and zero to seven reports of wound botulism. Almost all are type A.

2015: Zero cases of foodborne botulism, six cases of infant botulism (all type A) and two cases of wound botulism were reported, with no deaths.

Brucellosis

Cause: Bacteria in the genus *Brucella.*

Illness and treatment: Symptoms include fever, profuse sweating, fatigue, loss of appetite, chills, weight loss, headache, and joint pain. Treatment is with antibiotics.

Sources: Infection results from broken or damaged skin contacting animal tissues (particularly placentas or aborted fetuses) and animal fluids, or by consuming unpasteurized dairy products from infected species (mainly cattle, goats, sheep and swine). Airborne infection can occur in laboratories handling strains of *Brucella* cultures.

Prevention: Avoid unpasteurized dairy foods. Veterinarians, farmers and hunters should wear gloves when handling sick or dead animals or when assisting an animal giving birth. Laboratory workers should handle all specimens under appropriate biosafety conditions.

Recent Washington trends: Although brucellosis has been eradicated from cattle in the state since 1988, there are zero to four reports of human brucellosis infections each year, primarily due to consumption of raw dairy products in foreign countries.

2015: Four cases, all travel associated, were reported. These cases reported travel to Saudi Arabia, Mexico, multiple countries in Central America, and multiple countries in Southeast Asia. In addition, 60 laboratory personnel were exposed to *Brucella* cultures; no reported illnesses resulted from these exposure events.

Campylobacteriosis

Cause: Bacteria in the genus *Campylobacter*, most commonly *C. jejuni*.

Illness and treatment: Symptoms include diarrhea, sometimes containing blood, abdominal pain, fatigue, fever, and vomiting. Most persons will recover without treatment; however, serious complications can occur.

Sources: Transmission is fecal-oral, through ingestion of contaminated food that was inadequately cooked or mishandled, or through direct contact with animals. Reservoirs are animals such as cattle, puppies, kittens, swine, sheep, rodents and birds. Person-to-person transmission is uncommon. Commonly recognized exposures include: handling or eating undercooked/raw poultry, meat, unpasteurized (raw) milk or dairy products; drinking contaminated and inadequately treated water; and having contact with animals, especially young animals with diarrhea and poultry.

Additional risks: Those with weakened immune systems are at increased risk for infection.

Prevention: Avoid eating undercooked poultry and unpasteurized dairy products. Thoroughly clean cutting boards and counters used for raw meat or poultry to prevent contamination of other foods. Wash hands after handling animals, bird feces, or raw meat, particularly poultry.

Recent Washington trends: Campylobacteriosis is the most commonly reported enteric illness in Washington with 1,000 to 1,850 reports each year. Outbreaks involving person-to-person transmission are uncommon.

2015: 1,847 cases were reported.

Chlamydia Infection

Cause: Bacterium *Chlamydia trachomatis.*

Illness and treatment: Asymptomatic infection is common. There may be pain during urination or abnormal genital discharge. Females can have abdominal pain due to pelvic inflammatory disease,

which can cause infertility or ectopic pregnancy. The patient and sexual partners should take appropriate antibiotics. Treated patients should be retested in three months or when they next present for medical care.

Sources: Chlamydial infection is sexually transmitted or may be acquired at birth.

Additional risks: Disease rates are highest among sexually active adolescents and young adults. Perinatal infection can result in neonatal conjunctivitis or pneumonia.

Prevention: Use safe sexual practices to reduce transmission. Screen sexually active women at risk to detect infection in asymptomatic patients. Test and treat all recent sexual partners of a person diagnosed with chlamydia infection to stop ongoing transmission.

Recent Washington trends: Recently over 25,000 cases are reported each year.

2015: 28,721 cases were reported (410.0 cases/100,000 population).

Cholera

Cause: Bacterial toxin from *Vibrio cholerae* serogroup O1 or O139. Other *V. cholerae* do not produce toxin and cause milder illness notifiable as Vibriosis.

Illness and treatment: Illness ranges from mild symptoms to severe sudden profuse watery diarrhea leading to life-threatening dehydration. Treatment is fluid replacement and antibiotics.

Sources: The bacteria are carried in the human intestine and spread mainly through fecally contaminated food or water. The only environmental reservoir in the United States is the Gulf of Mexico where raw seafood may be contaminated.

Additional risks: Unsafe drinking water, poor hygiene, poor sanitation and crowded living conditions can cause epidemics, particularly in urban areas of developing countries and in refugee situations in Asia, Africa and Latin America. Persons with reduced stomach acid are at increased risk.

Prevention: If traveling to risk areas, consult with a travel clinic or the CDC Travelers' Health website for recommendations about vaccination and other measures.

Recent Washington trends: A case was reported in 2002 following travel to the Philippines.

2015: No cases were reported.

Cryptosporidiosis

Cause: Various species of the protozoan *Cryptosporidium*, which form resistant oocysts.

Illness and treatment: Symptoms may be prolonged, and include watery diarrhea, abdominal pain, nausea, vomiting, weight loss and fever. An anti-protozoal drug is available for persistent symptoms.

Sources: Cryptosporidia are common in animals. In this country oocysts are found in most surface waters tested. Transmission is by ingesting fecally contaminated water, milk or food, or by direct contact with infected animals or humans. Those with asymptomatic infections may infect others. Outbreaks have occurred in water parks, swimming pools and child care facilities.

Additional risks: For persons with weakened immune systems, especially those with advanced HIV infection, the disease can be severe and persistent. Cryptosporidia resist standard chemical disinfectants and may occur in municipal water systems, home filtered water, or bottled water.

Prevention: Wash hands thoroughly after using the toilet or contact with animals, particularly calves or animals with diarrhea. Avoid swallowing water during water recreation. Do not drink untreated surface water. Boil untreated drinking water for one minute or use other appropriate water treatment.

Recent Washington trends: After an increase in case reporting during 2005, following changed treatment and diagnostic practices, case rates have stabilized to between 88 and 139 cases per year.

2015: 113 cases were reported (1.6 cases/100,000 population).

Cyclosporiasis

Cause: Protozoan *Cyclospora cayetanensis.*

Illness and treatment: Symptoms include persistent watery diarrhea, nausea, loss of appetite, abdominal pain, fatigue and weight loss. Antibiotics are available to treat persistent symptoms.

Sources: Cyclospora are common in many developing countries. Transmission occurs through ingestion of contaminated water or food, often fresh fruit or vegetables. Outbreaks in the United States have been attributed to imported produce such as raspberries, basil and lettuce. Tests for Cyclospora must be specifically requested at many diagnostic labs in addition to O&P testing.

Additional risks: Diarrhea may persist with immunosuppression.

Prevention: Wash produce thoroughly before it is eaten. If traveling to risk areas, consult with a travel clinic or the CDC Travelers' Health website.

Recent Washington trends: Most years zero to 11 cases are reported yearly, mainly after international travel.

2015: Five cases were reported.

Diphtheria

Cause: Toxigenic strains of the bacterium *Corynebacterium diphtheriae.*

Illness and treatment: Classic diphtheria is an upper-respiratory tract illness characterized by sore throat, low-grade fever, and an adherent membrane of the tonsil(s), pharynx, and/or nose, sometimes with neck swelling. Diphtheria can involve almost any mucous membrane and may also be cutaneous. Treatment is with antitoxin, antibiotics, and supportive care.

Sources: Humans carriers are the reservoir. Transmission from asymptomatic carriers can occur. Transmission is by respiratory droplets, but may occur from skin lesions or articles soiled with discharges from an infected person including raw milk which has served as a vehicle.

Additional risks: Susceptible travelers to areas where routine immunization is lacking are at higher risk for diphtheria infection, especially if an epidemic is in progress.

Prevention: Universal immunization including booster doses prevents infection. Respiratory and hand hygiene prevent transmission.

Recent Washington trends: The last recorded case was in 1981.

2015: No cases were reported.

Giardiasis

Cause: Protozoan *Giardia lamblia*, also known as *G. intestinalis* or *G. duodenalis*.

Illness and treatment: Infection may be asymptomatic or may cause diarrhea, abdominal pain, nausea, fatigue, and weight loss. Illness may be self-limited or be prolonged with persistent pale and greasy stools due to fat malabsorption. Anti-protozoal drugs are available.

Sources: Humans and both wild and domestic animals are reservoirs. Exposures include untreated surface water, shallow well water, recreational water, or, less commonly, food contaminated by feces. Person-to-person transmission can occur, such as in child care facilities, or by oral-anal sexual contact.

Additional risks: Children under five years of age are infected more frequently than adults. Concentrations of chlorine used in routine water treatment may not kill *Giardia* cysts, especially if the water is cold. Giardiasis is one of the most common waterborne diseases in the country.

Prevention: Wash hands thoroughly after using the toilet or contact with animals, particularly animals with diarrhea. Avoid swallowing water during water recreation. Do not drink untreated surface water. Boil untreated drinking water for one minute or use other appropriate water treatment.

Recent Washington trends: Reported cases have been declining somewhat over the past decade. Incidence is highest in the summer and fall months. Most frequently reported exposures include recreational water and international travel. Outbreaks are uncommon.

2015: 604 cases were reported.

Gonorrhea

Cause: Bacterium *Neisseria gonorrhoeae.*

Illness and treatment: Many women and some men have no symptoms with infection. When symptoms occur, urethral discharge and painful urination are typical of genital infections. Complications include pelvic inflammatory disease in women, producing a risk of infertility, or epididymitis in men. There can be conjunctivitis, pharyngitis, proctitis, or rarely sepsis. Due to increasing drug resistance, treatment with two antibiotics is recommended. Treated patients should be retested in three months or when they next present for medical care.

Sources: Gonorrhea is sexually transmitted or may be acquired at birth.

Additional risks: Disease rates are highest among men and sexually active younger adults. Perinatal infection can result in neonatal conjunctivitis or sepsis.

Prevention: Use safe sexual practices to reduce transmission. Screening to detect asymptomatic patients is only recommended for women at increased risk for infection. If gonorrhea is found, also test for other sexually transmitted infections including HIV. Test and treat all recent sexual partners of a person diagnosed with gonorrhea to stop ongoing transmission.

Recent Washington trends: Recently over 3,000 cases were reported each year.

2015: 7,203 cases were reported (102.8 cases/100,000 population).

Haemophilus influenzae (Invasive Disease, Under Age 5 Years)

Cause: Bacterium *Haemophilus influenzae.* Invasive disease due to any of the six capsular types, including type b (Hib), in a child under five years of age is reportable.

Illness and treatment: Invasive syndromes can include meningitis, bacteremia, epiglottitis, pneumonia, or bone and joint infections. Symptoms of meningitis include fever, headache, stiff neck, vomiting, light sensitivity and confusion. About ten percent of cases surviving *H. influenzae* meningitis (due to any capsular type) have permanent neurological damage; however, among cases surviving meningitis due to Hib, 15 to 30 percent have hearing impairment or permanent neurologic damage. Treatment is with antibiotics.

Sources: Humans, including asymptomatic carriers, are the reservoir. Transmission is through respiratory droplets or direct contact with respiratory secretions.

Additional risks: Unimmunized or under-immunized infants and children are at risk for Hib, especially when they are taken into crowded settings.

Prevention: Immunize all infants to prevent *H. influenzae* type b infection. Respiratory and hand hygiene reduces transmission of all serotypes.

Recent Washington trends: Two to 11 cases (due to all serotypes) are reported annually in children less than five years of age. Among the 69 cases reported in this age group during 2006 through 2015, isolates were available to serotype for 66 (96 percent) cases. Among those only 14 (21 percent) were due to serotype b (Hib). In both Washington and nationwide, there has been a recent increase in the proportion of isolates from invasive disease cases that are non-typeable over the past decade. During that period, 47 percent of isolates available for serotyping in Washington did not agglutinate to any of the six known serotypes.

Table 1. Number of *H. influenzae* Cases Among Children <5 Years Old by Serotype, Washington State, 2006-2015

Year	Total	Not tested	Isolate available	B	Non-B	Not typeable	%B	% Not typeable
2006	5	0	5	1	3	1	20%	20%
2007	6	0	6	3	2	1	50%	17%
2008	2	0	2	0	0	2	0%	100%
2009	9	3	6	1	3	2	17%	34%
2010	10	0	10	0	3	7	0%	70%
2011	8	0	8	1	3	4	13%	50%
2012	4	0	4	1	1	2	25%	50%
2013	11	0	11	2	2	7	18%	64%
2014	9	0	9	4	2	3	45%	33%
2015	5	0	5	1	2	2	20%	40%
Total	**69**	**3 (4%)**	**66→**	**14**	**21**	**31**	**21%**	**47%**

Hantavirus Pulmonary Syndrome (HPS)

Cause: Sin Nombre virus in western United States, other viruses elsewhere.

Illness and treatment: Fever and mild flu-like symptoms are followed by acute respiratory distress syndrome (ARDS) with respiratory failure and shock. Treatment is supportive.

Sources: The deer mouse (*Peromyscus maniculatus*) is the major reservoir for Sin Nombre virus. Exposure occurs by inhaling aerosolized virus excreted in mouse urine, feces or saliva, particularly during improper cleaning of deer mouse infested areas.

Prevention: Keep rodents out of the home and workplace. When cleaning rodent-infested areas, use appropriate safety precautions.

Recent Washington trends: Since the recognition of hantavirus in 1993, 47 cases were reported through 2015 with 16 (34 percent) associated deaths (including a retrospectively identified case from 1985). In recent years there are usually one to three cases, predominately exposed in eastern counties.

2015: One case was reported with no deaths.

Hepatitis A

Cause: Hepatitis A virus.

Illness and treatment: Onset is usually abrupt with fever, nausea, and abdominal pain followed by jaundice. Cases may be asymptomatic, particularly in children. Almost all cases recover but rare infections are fatal or require liver transplantation. Treatment is supportive.

Sources: Acutely infected humans shed virus in the feces and transmit directly (fecal-oral spread) or through fecally contaminated food (produce, shellfish, uncooked items), water, and environment, often encountered during international travel. Recent outbreaks in this country have been associated with imported produce. Bloodborne transmission is very rare.

Additional risks: Infected young children may have no symptoms but can be communicable. Transmission can occur within groups having poor hygiene or fecal-oral sexual practices.

Prevention: To prevent infection, immunize all children and any adults with risks for exposure, including travel to endemic areas.

Recent Washington trends: Since 1989 when there were 3,273 cases, with increased vaccination hepatitis A incidence decreased to fewer than 100 cases a year.

2015: Twenty-six cases (0.4 cases/100,000 population) were reported with no deaths. Twelve cases were related to international travel; three associated with travel to Mexico, two to India, three to the Philippines, one each to Belize, Guatemala, Central America, and multiple continents.

Hepatitis B

Cause: Hepatitis B virus.

Illness and treatment: Acute infection may be asymptomatic or have abrupt onset with fever, abdominal pain, and jaundice. Chronic infection is typically asymptomatic until complications such as liver damage or cancer develop after decades. Surface antigen positivity (contagious) during pregnancy from acute or more typically chronic infection gives a risk of transmitting the virus during delivery. Perinatal infection is typically asymptomatic but carries a high risk for later complications. A specialist can determine treatment options for hepatitis B virus infections.

Sources: Transmission is by contact with the blood, semen or vaginal secretions of an infected person, and can occur with minor exposures or during childbirth.

Additional risks: After acute infection, about 30 percent of children under five years will become chronically infected compared to about five percent of adults. Infants born to surface antigen positive women are at extremely high risk (90 percent) of becoming chronically infected, and for developing later complications including liver cancer.

Prevention: To prevent infection, routine hepatitis B immunization of all infants and children is recommended starting at birth. Adults at high risk are also recommended to get hepatitis B vaccine, including household and sexual contacts, healthcare workers, men who have sex with men, persons with HIV infection, and adults with diabetes aged 19 to 59 years. The vaccine can also be administered during pregnancy to those at risk. Routine testing is recommended for those born in Asia, Africa, and other regions with ≥ 2% prevalence of chronic infections. For infants born to hepatitis B positive women, hepatitis B vaccine and one dose of hepatitis B immune globulin (HBIG) administered within 12 hours after birth are 85 to 95 percent effective in preventing both acute HBV infection and chronic infection.

Recent Washington trends: Since 1987 when there were 1,126 acute cases, hepatitis B incidence has recently decreased to fewer than 50 acute cases per year with increased vaccination. On average, 1,131 cases of chronic hepatitis B were reported per year between 2005 and 2014. Between 2005 and 2013 3,060 babies born to HBsAg positive women were reported to local health jurisdictions. Of these (98 percent) received treatment within one day of birth and only 20 infants receiving all recommended treatment and follow-up testing developed chronic hepatitis B infections.

2015: Thirty-four acute cases (0.5 cases/100,000 population) and no deaths were reported. Among 318 infants born to surface antigen positive women one perinatal infection was reported. A total of 1,309 chronic hepatitis B cases (18.5 cases/100,000 population) were reported in 2015.

Hepatitis C

Cause: Hepatitis C virus, which has 6 genotypes.

Illness and treatment: Most acute infections are asymptomatic but about 20 percent of cases have abrupt onset with fever, abdominal pain, and jaundice. Chronic infection is typically asymptomatic until complications such as liver damage or cancer develop after decades. A specialist can determine treatment options for hepatitis C viral infections.

Sources: Transmission is usually by contact with blood, particularly while sharing drug paraphernalia, or less commonly with semen or vaginal secretions of an infected person.

Additional risks: Chronic infection follows acute infection in 75 to 85 percent of cases and is more likely for males, those infected after 25 years of age, or the immunosuppressed including HIV co-infection.

Prevention: Use safe sexual practices, avoid sharing drug paraphernalia, and screen blood and tissue products to prevent transmission. Routine testing is recommended for those with any bloodborne transmission risk and once for those born 1945 to 1965.

Recent Washington trends: Each year fewer than 30 acute cases are reported. On average, 5,457 cases of chronic hepatitis C are reported per year between 2005 and 2014.

2015: Sixty-three acute cases (0.9 cases/100,000 population) were reported. The youngest was age 18 years. Forty-three of 58 cases with information had injection drug use as a risk factor. A total of 6,918 chronic hepatitis C cases (98.0 cases/100,000 population) were reported in 2015.

Hepatitis D or E

Cause: Hepatitis D virus and hepatitis E virus. Hepatitis D virus infection always occurs with hepatitis B infection, either with a chronic hepatitis B infection (superinfection) or as two simultaneous new infections (coinfection).

Illness and treatment: Hepatitis D and E typically have abrupt onset of fever, nausea, and abdominal pain followed by jaundice. Hepatitis D may progress to chronic hepatitis.

Sources: Humans are the reservoir for hepatitis D, which is usually transmitted by blood or body fluids, particularly shared drug paraphernalia. Although risk factor are not well understood, humans and animals (swine) are the likely reservoirs for hepatitis E, with transmission through fecally contaminated food and water. Cases of hepatitis E are typically travel associated.

Additional risks: Pregnant women have higher risk for hepatitis E complications. Japan has reported more virulent hepatitis E strains.

Prevention: To avoid hepatitis B infection, and therefore hepatitis D infection, immunize all infants and children as well as any adult with risks for exposure. Use safe sexual practices, avoid sharing drug paraphernalia, and screen blood and tissue products to prevent hepatitis D transmission. Use precautions while traveling to ensure safe food and water to avoid hepatitis E infection.

Recent Washington trends: Reports are rare. Cases of hepatitis D are typically associated with injection drug use.

2015: There were three cases of hepatitis E.

Herpes Simplex, Genital and Neonatal

Cause: Herpes simplex virus serotypes HSV-1 and HSV-2.

Illness and treatment: Genital infection is lifelong, ranging from no symptoms to recurring episodes of mild to painful genital ulcers. Antiviral medications partially control the frequency and severity of the episodes but are not a cure. Neonatal infection may be severe, involving the liver or brain; or mild, involving the skin, eyes, and mouth.

Sources: Herpes infection is sexually transmitted or acquired at birth.

Additional risks: Disease rates are higher in younger women.

Prevention: Use safe sexual practices to reduce transmission. During the third trimester, pregnant women without herpes should abstain from sexual contact with partners known or suspected of having herpes.

Recent Washington trends: Recently about 2,000 cases reported each year.

2015: 2,524 cases of initial genital HSV infection (36.0 cases/100,000 population) and one case of neonatal infection were reported.

HIV/AIDS

Cause: HIV disease is caused by the human immunodeficiency virus (HIV). After HIV enters the body, it infects and kills white blood cells (CD4+ T-cell lymphocytes). This weakens the body's immune system, and can eventually cause a person to develop Acquired Immune Deficiency Syndrome (AIDS).

Illness and treatment: AIDS is defined by a person's CD4+ T-cell count being below 200 cells/mL and/or the existence of one or more of a broad range of opportunistic illnesses that are specific to HIV disease. The presence of AIDS is usually an indication that a person has been infected with HIV for many years.

Sources and spread: HIV enters the body as a result of direct contact with blood, semen, vaginal fluid, or breast milk from a person with HIV infection. Most HIV cases are the result of unprotected sex with an HIV-positive partner.

Additional risks: Groups at increased risk for HIV include injection drug users, people who use illegal stimulants such as methamphetamines or cocaine, people who have concurrent sexual relationships, and people recently diagnosed with other sexually-transmitted infections.

Prevention: Wear condoms during sex. Use clean needles and other equipment used to inject drugs. Do not have a sexual relationship with more than one person at a time.

Recent Washington trends: Statewide, annual HIV case counts have gradually declined over the past several years. Between 450 and 500 people are newly diagnosed with HIV infection each year. About one in three cases is diagnosed late in the course of his or her HIV illness, or develops AIDS within 12 months of HIV diagnosis. HIV rates are highest among gay and bisexual men, as well as racial or ethnic minorities.

2015: 446 cases were reported (6.4/100,000 population).

Legionellosis

Cause: Bacteria in the genus *Legionella*, commonly *L. pneumophila* serogroup 1 but also other serogroups or other species such as *L. micdadei*, *L. bozemanii*, and *L. longbeachae*.

Illness and treatment: There are two clinically and epidemiologically distinct illnesses. Legionnaires' disease presents with fever, muscle aches, cough, and pneumonia. Pontiac fever is a milder illness without pneumonia. Treatment is with antibiotics.

Sources: The organism is ubiquitous. Hot water systems (showers), air conditioning cooling towers, evaporative condensers, humidifiers, whirlpool spas, respiratory therapy devices, decorative fountains, and potting soil have been implicated epidemiologically in outbreaks.

Additional risks: Illness is more common with age over 50 years, smoking, diabetes, chronic lung disease, or immunosuppression (particularly due to corticosteroids or organ transplant).

Prevention: Maintain cooling towers properly. Do not use tap water in respiratory therapy devices.

Recent Washington trends: The number of cases each year varies from less than ten to over 50; each year, there are generally one to five deaths.

2015: Fifty-eight cases (0.8 cases/100,000 population) were reported with two deaths. Nationwide, legionellosis incidence is on an upward trend, though reasons for the increase are unclear; increased testing may be a factor.

Leptospirosis

Cause: Spiral shaped bacteria (spirochetes) in the genus *Leptospira*.

Illness and treatment: Symptoms include fever, headache, and severe muscle aches. Jaundice, kidney failure, or meningitis can develop. Treatment is with antibiotics.

Sources: The disease affects wild and domestic animals, including pets. Urine and tissues are infective. Transmission occurs by skin or mucous membrane contact with urine or tissues from an infected animal or exposure to contaminated water, food, or soil, or inhalation of aerosolized fluids during recreation or farm work.

Prevention: Avoid contact with urine from infected animals and with water or soil potentially contaminated with animal urine.

Recent Washington trends: Generally zero to five cases are reported. Most infections relate to recreational water exposure in Washington or during travel.

2015: Two cases were reported, one with exposure in Washington and one with travel to American Samoa.

Listeriosis

Cause: Bacterium *Listeria monocytogenes*.

Illness and treatment: Symptoms depend on the host. Immunocompromised, neonatal, and elderly persons usually present with sepsis and meningitis. In pregnant women, listeriosis may cause a flu-like illness (i.e., fever, headache, and muscle aches) and may cause miscarriages, preterm births, or stillbirths. Immunocompetent persons may have acute febrile gastroenteritis. While diarrhea can occur, standard stool culture methods usually do not detect *Listeria*. Severe infections are treated with antibiotics.

Sources: The organism occurs in soil, water, and the intestines of animals and humans. Transmission is mainly through food, such as unpasteurized milk, cheese, processed meats, deli salads, fruits and vegetables. Food can be contaminated during or after processing.

Additional risks: Unlike most foodborne pathogens, *Listeria* can multiply in refrigerated foods. Illness may be severe for newborns, the elderly, and persons with weakened immune systems. Pregnant women with listeriosis may have few symptoms but have fetal loss or premature birth.

Prevention: If pregnant or immunocompromised, avoid soft cheeses made with unpasteurized milk, processed ready-to-eat foods, and smoked fish. Thoroughly cook all foods from animal sources, wash raw produce thoroughly, and heat leftovers, hot dogs and deli meats until steaming before eating.

Recent Washington trends: Each year there are 11 to 29 reports with zero to five deaths.

2015: Twenty-one cases were reported (0.3 cases/100,000 population) with three deaths.

Lyme Disease

Cause: Spiral shaped bacterium (spirochete) *Borrelia burgdorferi*.

Illness and treatment: The classic sign of early Lyme disease is erythema migrans, a rash apparent in 70-80 percent of cases. Systemic symptoms such as fatigue, headache, fever, and muscle and joint aches can also occur in early infection. Disseminated infection can manifest as recurrent joint swelling, peripheral or central nervous system involvement, or heart complications. Treatment with two to four weeks antibiotics clears infection.

Some patients may experience post-treatment Lyme disease syndrome, in which symptoms linger after treatment and clearance of *B. burgdorferi*. Current scientific evidence does not support the effectiveness of prolonged antibiotic treatment for a diagnosis of chronic Lyme disease.

Sources: *B. burgdorferi* is maintained in an enzootic cycle involving *Ixodes* ticks and mammal

reservoirs, especially mice and other small mammals. In the Pacific Coastal United States, the primary vector is *Ixodes pacificus* (western blacklegged tick), which lives in wooded or brushy areas. In Washington, *I. pacificus* is found in the western half of the state and along the eastern slopes of the Cascade Mountains. In the northeastern and Upper Midwest regions of the United States, the tick vector is *I. scapularis* (blacklegged or "deer" tick). Ticks must be attached for at least 24-36 hours to transmit *B. burgdorferi*.

Prevention: During outdoor activities in *Ixodes* tick habitat, avoid tick bites by wearing light-colored clothing and using repellents containing DEET or permethrin. Check the body thoroughly for ticks after time outdoors. Be alert for rash, fever, or other symptoms of Lyme disease during the month after a known tick bite or spending time in tick habitat; if symptoms develop, see a health care provider.

Recent Washington trends: Each year, seven to 24 Lyme disease cases are reported in Washington. Most Washington cases result from a tick bite that occurred out-of-state. The few endemic cases have tick exposures predominantly on the west side of the Cascade Mountains, reflecting the known distribution of the *Ixodes* vector ticks. Low levels of *B. burgdorferi* have been found in ticks collected from Washington State.

2015: Twenty-four cases were reported; two were exposed in Washington, 19 were exposed in other states, two were exposed in other countries, and one had an unknown exposure location.

Malaria

Cause: *Plasmodium* species, commonly *P. vivax*, *P. falciparum*, *P. ovale*, and *P. malariae*.

Illness and treatment: Classic malaria involves recurrent bouts of fever, chills, sweats, and headache. Many other symptoms can occur, affecting the gastrointestinal, respiratory, muscular, and neurological systems. Treatment is with antimalarial drugs and supportive care.

Sources: Transmission occurs by the bite of infected anopheline mosquitoes.

Additional risks: Although rarely seen in the United States, transmission can occur through blood contact (e.g., transfusions or needle-sharing).

Prevention: When traveling in risk areas avoid mosquito bites, take medication to avoid malaria, and receive proper treatment if infected.

Recent Washington trends: Each year there are 20 to 40 reports among tourists, military personnel, business travelers, mission workers, immigrants and refugees.

2015: Twenty-three cases (0.3 cases/100,000 population) were reported. Fifteen were *P. falciparum*, one *P. vivax*, one *P. ovale*, one *ovale-vivax* co-infection, and five were unknown *Plasmodium* species. Travel exposures were mainly in Africa.

Measles

Cause: Measles virus, a family Paramyxovirus, genus *Morbillivirus*.

Illness and treatment: Typical measles includes a two to four day prodrome that includes fever up to 101°F with a cough, conjunctivitis, or runny nose. The prodrome is followed by a maculopapular rash which typically starts at the hairline and extends downward to cover the entire body. The rash lasts five to six days or longer. Complications are more common among children under five and adults over 20 years of age and can include diarrhea, ear infection, pneumonia, and acute

encephalitis. Measles can be fatal. Rarely, measles can occur in a person known to have received a vaccination for measles but the illness in these cases may not be typical. The case fatality rate for measles in this country is 0.1–0.3 percent but in parts of the world with poor nutrition and limited access to health care it can be much higher. Treatment is supportive.

Sources: Humans are the reservoir. Measles is highly contagious with transmission occurring primarily through respiratory droplets. However, airborne transmission has been documented to have occurred in closed areas for up to two hours after a person with measles was present.

Additional risks: Measles in the United States is mainly related to international travel by susceptible persons who travel to and from countries where measles is endemic or where an outbreak is occurring. Transmission to additional persons that are not vaccinated can occur, leading to outbreaks. In developing countries, malnutrition increases the risk of severe complications and death.

Prevention: Universal immunization prevents initial infection in almost all exposed persons. Aggressive follow-up with exposed persons, along with respiratory hygiene and isolation of contagious individuals, can prevent further transmission.

Recent Washington trends: Since 1996, when 36 cases were reported related to a large outbreak at Western Washington University, there have typically fewer than five cases reported annually. However, outbreaks with seven to 33 cases occurred in Washington in 2001, 2004, 2008 and 2014. In 2015, one outbreak occurred with six cases, one of which was fatal. An additional four cases not related to the outbreak were also reported.

2015: Ten cases were reported with one death.

Meningococcal Disease (Invasive)

Cause: *Neisseria meningitidis*, mainly serogroups B, C, Y, and W135 in the United States, and additionally serogroup A, elsewhere. Invasive disease is reportable.

Illness and treatment: Invasive meningococcal disease most commonly manifests as meningitis with symptoms of fever, headache, stiff neck, vomiting, light sensitivity and confusion, or as a bloodstream infections (meningococcemia) which can cause fever and septic shock as well as a rash (bruise-like skin lesions) and often leads to severe outcomes (e.g. permanent disability due to loss of limbs) or even death. A person may have both syndromes together. Pneumonia and joint infections can also occur. Even with appropriate antibiotic treatment and supportive care, overall case fatality rate for invasive disease is nine to 12 percent.

Sources: Humans, including asymptomatic carriers, are the reservoir. Transmission is through respiratory droplets or direct contact with respiratory secretions. Secondary cases are rarely documented, though outbreaks can occur.

Additional risks: Rates are highest for infants under 12 months. An increasing proportion of cases are in adolescents and young adults. Crowded living conditions such as dormitories, recent history of an upper respiratory illness, and tobacco smoke exposure may increase risk, as do certain immune deficiencies including asplenia.

Prevention: Universal immunization is recommended for all adolescents aged 11 to 18 years and for some persons aged two to 55 years at increased risk for this disease (e.g., persons with HIV, complement disorder or asplenia, and some microbiologists and travelers at prolonged increased risk

for disease exposure). Prophylactic antibiotics are usually advised for persons having recent close contact with a confirmed case. Good respiratory hygiene can reduce transmission risk.

Recent Washington trends: During the past decade, an average of 48 cases (range 22 to 76) have been reported annually, with as many as eight deaths in a year.

2015: Ten cases (0.2 cases/100,000 population) were reported with one death.

Table 2. Number of Meningococcal Disease Cases by Serogroup, Washington State, 2006-2015

Year	Total	Not Tested*	Isolate available	B	C	Y	W135	Other	% Vaccine (A/C/Y/W) serogroup	% B
2006	43	8	35	19	9	7	0	0	46%	54%
2007	28	1	27	13	4	10	0	0	52%	48%
2008	31	3	28	11	5	9	2	1	57%	39%
2009	25	2	23	13	2	8	0	0	43%	57%
2010	29	2	27	7	7	12	1	0	74%	26%
2011	22	0	22	12	2	7	1	0	45%	55%
2012	24	0	24	9	4	8	0	3	50%	40%
2013	20	3	17	9	2	3	2	1	41%	53%
2014	17	0	17	6	5	4	1	1	59%	35%
2015	10	0	10	3	4	1	2	0	70%	30%
Total	**249**	**19 (8%)**	**230**	**102**	**44**	**69**	**9**	**6**	**45%**	**44%**

Mumps

Cause: Mumps virus, a paramyxovirus.

Illness and treatment: Mumps causes inflammation of glandular tissue, most commonly the salivary glands (parotitis occurs in 30 to 40 percent of infected persons). Other glandular tissue involvement that can occur includes inflammation of testes (orchitis) or ovaries (oophoritis). Up to 20 percent of infections have no symptoms and an additional 40 to 50 percent have mild, nonspecific, or primarily respiratory symptoms. Complications include encephalitis or aseptic meningitis (occasionally resulting in deafness), pancreatitis, and myocarditis. Treatment is supportive.

Sources: Humans, including persons with asymptomatic infection, are the reservoir. Transmission is mainly through direct contact with infected respiratory droplets or saliva.

Additional risks: The average age of reported mumps cases has gradually increased, with a majority of cases now occurring in persons 15 years of age and older. A large outbreak of mumps occurred in 2006 in nine Midwestern states; the majority of cases were college-aged persons and adults in their 20s. Outbreaks in college settings have continued to occur since that time. Another outbreak in 2009-10 involved a religious community with many of the cases in immunized adolescent males who attended private schools and spent many hours face to face each day.

Prevention: Recommendations for universal childhood immunization have greatly reduced the number of infections. Two doses of mumps-containing vaccine are now recommended for school aged-children, college students, and health care workers born in or after 1957. Respiratory and hand hygiene can also reduce transmission. A third dose has been used in some settings to control an ongoing outbreak.

Recent Washington trends: Between 1992 and 2005 the rate of reported mumps infections was up to 0.5 per 100,000 persons or less (zero to 26 cases per year). Due to the increased awareness of mumps following the 2006 outbreak in the Midwest, 42 and 53 cases were reported in 2006 and 2007, respectively. A change in the national reporting criteria was made in 2008 and the rate of reported mumps returned to pre-2006 levels.

2015: Seven cases were reported.

Pertussis

Cause: Bacterium *Bordetella pertussis*.

Illness and treatment: Classic pertussis symptoms include initial cold-like manifestations followed by an extended cough illness that can include severe spasms of coughing (paroxysms) that are often followed by an inspiratory gasp or whoop, or by vomiting. The coughing can last for weeks. Infants with pertussis may have feeding difficulties and often become apneic (unable to breathe). Treatment is with antibiotics and supportive care.

Sources: Humans. Older adolescents and adults with mild symptoms not recognized as pertussis often serve as a reservoir in the community. Pertussis is transmitted through respiratory droplets or direct contact with respiratory secretions.

Additional risks: Complications, which occur most often in very young infants, can include pneumonia, seizures, encephalopathy and death.

Prevention: Recommended universal childhood immunization with a booster dose for adolescents and adults can reduce the risk of infection and generally prevents severe illness in most age groups. Very young infants (under two months of age) too young to be immunized can be protected by vaccinating pregnant women during the last trimester of each pregnancy. Assuring that others who will have close contact with the infant have been vaccinated is also important. Respiratory and hand hygiene can reduce transmission. Any person with a cough illness should avoid contact with pregnant women and young infants.

Recent Washington trends: The number of cases reported each year varies considerably, ranging from 184 to 4,916 (during the 2012 outbreak) cases a year over the past two decades. There is also variation between health jurisdictions in the rate of reported disease, reflecting local outbreaks.

2015: 1,383 cases (19.6 cases/100,000 population) were reported.

Plague

Cause: Bacterium *Yersinia pestis.*

Illness and treatment: Plague causes three clinical syndromes: bubonic (fever, headache, nausea and unilateral lymph node swelling); septicemic (bacteremia and multi-organ system failure); and pneumonic (pneumonia). A patient may have several syndromes. About 11 percent of plague cases in the United States are fatal. Treatment is with antibiotics and supportive care.

Sources: Wild rodent populations are the natural reservoir where plague is maintained by fleas. Humans are infected through flea bites, handling tissues from infected animals, or respiratory droplet spread from animals or people with pneumonic plague.

Prevention: Avoid contact with sick or dead wild animals, rodent-proof houses, prevent pets from contracting fleas, and use repellents on skin and clothing when outdoors.

Recent Washington trends: Testing of 8,787 wildlife (mostly coyote) serum specimens collected July 1975 to June 2014 in Washington found 226 (2.6 percent) seropositive, a measure of previous exposure, not necessarily current disease. Human infections are rare. The last reported case was an animal trapper in Yakima exposed while skinning a bobcat in 1984. In neighboring Oregon, seven people have been diagnosed with plague between 2010 and 2015, along with a positive cat in 2012.

2015: No human cases of plague were reported.

Polio

Cause: Poliovirus, a member of the enterovirus subgroup, family Picornaviridae. Three serotypes, P1, P2, and P3 (and the related live oral vaccine strains), can cause disease.

Illness and treatment: Over 90 percent of infections are asymptomatic and four to eight percent result in only minor illnesses. Non-paralytic aseptic meningitis with full recovery occurs in one to two percent of infections. Less than one percent of infections result in flaccid paralysis. Treatment is supportive.

Sources: Humans are the reservoir. Transmission is mainly through the fecal-oral route. Virus may be present in the stool of an infected person for three to six weeks.

Additional risks: Travel by susceptible persons to the few countries where polio is still endemic or to countries still routinely using oral polio vaccine can increase the risk of becoming infected.

Prevention: Universal childhood immunization prevents infection. Only inactivated polio vaccine – which can prevent paralysis, but does not provide intestinal immunity – is now used in this country. There is no recommendation for routine immunization of adult residents of the United States.

In 2015, surveillance for Acute Flaccid Myelitis (AFM) was implemented in Washington State. Since all patients who present with AFM and no sensory or cognitive loss should be considered as a possible paralytic poliomyelitis case, risk factors and immunization status are reviewed. If appropriate, testing to rule out polio is conducted in order to assure that any case of polio that occurs in Washington is rapidly detected to prevent further spread.

Recent Washington trends: The last naturally acquired infection with wild-type polio virus was in 1977. In 1993, a case of vaccine-associated paralytic polio occurred in a state resident after a family member received live oral polio vaccine (which is no longer used in the United States).

2015: No cases of AFM or polio were reported.

Psittacosis

Cause: Bacterium *Chlamydophila* (previously *Chlamydia*) *psittaci*.

Illness and treatment: Abrupt onset of fever, chills, headache, and nonproductive cough which may progress to shortness of breath and pneumonia. Treatment is with antibiotics.

Sources: Birds in the parrot family are common sources, with poultry, pigeons, canaries, and sea

birds being less common sources. Infection usually occurs when a person inhales organisms excreted in aerosolized dried feces or respiratory tract secretions of infected birds.

Prevention: Avoid purchasing or selling birds that appear ill, practice preventive husbandry, and wear protective clothing when cleaning cages or handling infected birds. If respiratory or influenza-like symptoms occur after bird caretaking, seek medical attention and report bird contact.

Recent Washington trends: Each year there are zero to four reports commonly associated with indoor exposure to pet birds and less commonly farm or wild birds.

2015: No cases of psittacosis were reported.

Q Fever

Cause: Bacterium *Coxiella burnetii.*

Illness and treatment: Acute Q fever symptoms are fever, cough, chills, retrobulbar headache, malaise, weakness, and severe sweats. Chronic Q fever manifests primarily as endocarditis. Treatment is with antibiotics.

Sources: The most common reservoirs are sheep, cattle, and goats. Infected animals are usually asymptomatic; they shed the organism in highest concentration in birthing products but also in urine, feces, and milk. A common exposure mechanism is inhalation of dust from premises contaminated by placental tissues, birth fluids, or excreta of infected animals.

Additional risks: Pregnant women, persons with pre-existing heart valvulopathies, and immunosuppressed persons are at increased risk of developing chronic infection.

Prevention: Consume only pasteurized milk and dairy products. Appropriately dispose of animal birth products. Restrict access to barns and facilities housing potentially infected animals. Compost manure in a covered area instead of spreading it in fields. Persons with risk factors should not assist in animal birthing. Limit visitors during kidding season and advise them about high risk groups.

Recent Washington trends: In most years there are zero to three cases. A notable exception occurred in 2011, when eight cases were linked to a goat-associated outbreak.

2015: Three cases were reported.

Rabies (Human)

Cause: Rabies virus.

Illness and treatment: Initial neurologic symptoms include abnormal skin sensation or pain, often affecting the site of the bite, and subtle personality changes. Later neurologic symptoms include seizures, excess salivation, fear of water, delirium, agitation, and paralysis. Symptomatic illness is considered to be universally fatal with a few notable exceptions: experimental treatment in this country saved one young girl in Wisconsin (2005); Texas reported a case of presumptive abortive human rabies (2009); California reported a recovery of a patient with clinical rabies (2011).

Sources: Rabies virus is carried by mammals. In Washington, bats are the primary reservoir of rabies virus. Skunks, raccoons, and foxes are additional reservoirs elsewhere in this country. In some countries, dogs are the main reservoirs.

Although bats are Washington's primary known reservoir, other mammals can acquire rabies virus from a bat, and importation of rabies from other regions could also occur. Rabies virus is most often transmitted via a bite from a rabid animal, but can also be spread if saliva or other infectious material

(e.g., brain tissue) contaminates broken skin or mucosa. Person-to-person transmission is documented only by tissue/organ transplantation.

Prevention: Obtain post-exposure prophylaxis for exposure to a rabid or potentially rabid animal. Certain high risk groups, such as veterinary staff or persons who frequently handle wild animals, should have pre-exposure vaccination. Keep vaccinations up-to-date for all dogs, cats and ferrets, avoid contact with unfamiliar animals, and keep bats out of the home.

Recent Washington trends: Two human cases due to infection with the bat rabies variant of rabies virus were reported in the past 50 years, one in 1995 and one in 1997.

2015: No human rabies cases were reported.

Rabies, Suspected Human Exposure

Information about rabies post-exposure prophylaxis (PEP) is available from the Advisory Committee on Immunization Practices available from CDC (www.cdc.gov/rabies/). Also see Rabies (Human).

Recent Washington trends: In previous years PEP administration was tracked, with typically 240 to 290 persons receiving PEP per year. Following a WAC change in February 2011, this condition changed to "suspected rabies exposure" which should include all PEP as well as instances where PEP was advised but declined by patient. Of bats tested in Washington, three to 10 percent are identified as rabid each year. Since 1987, only five rabid domestic animals have been identified; two with bat variant virus (Table 3).

2015: 244 reports of suspected rabies exposure were reported. The most common exposures were bats (73 percent) and dogs (nine percent). Nine (three percent) of 305 of tested bats were rabid (Table 4). One (one percent) of 95 cats tested was rabid; bat-variant rabies was identified in this case (Table 5).

Table 3. Rabid Non-Bat Animals and Rabies Strains, Washington, 1987–2015

Year	Animal type (County)	Rabies strain
2015	Cat (Jefferson)	Bat-variant
2002	Cat (Walla Walla)	Bat-variant
1994	Llama (King)	Bat-variant
1992	Horse (Franklin)	Unknown
1987	Dog (Pierce)*	Unknown, but history of bat exposure

* Infection was not confirmed at CDC

Table 4. Washington State Bats Tested for Rabies 2011-2015

	2011		2012		2013		2014		2015		County Total	
Counties	Positive	Total	Positive	Total	Positive	Total	Positive	Total	Positive	Total	Positive	Tested
Adams	0	1	0	0	0	0	0	1	0	0	0	2
Asotin	0	1	0	0	0	3	0	0	0	0	0	4
Benton	0	0	0	1	0	2	0	1	0	2	0	6
Chelan	1	1	1	13	0	2	0	6	0	8	2	30
Clallam	1	7	0	1	1	6	1	5	0	4	3	23
Clark	0	11	0	9	0	18	0	16	1	16	1	70
Columbia	0	0	0	0	0	0	0	0	0	0	0	0
Cowlitz	0	5	1	3	0	14	0	13	0	7	1	42
Douglas	0	1	0	1	0	0	0	0	0	0	0	2
Ferry	0	1	0	2	0	0	0	1	0	0	0	4
Franklin	0	0	0	1	1	1	0	0	0	1	1	3
Garfield	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	1	0	3	0	1	0	3	0	2	0	10
Grays Harbor	0	1	1	3	0	1	0	0	0	5	1	10
Island	1	10	1	9	0	10	1	10	0	12	3	51
Jefferson	0	1	0	5	1	4	0	6	0	8	1	24
King	1	45	1	47	4	64	4	64	2	65	12	285
Kitsap	0	15	0	10	1	27	3	19	0	20	4	91
Kittitas	0	0	0	2	1	3	0	4	0	3	1	12
Klickitat	0	1	0	3	0	0	2	3	0	3	2	10
Lewis	1	9	0	9	0	11	0	13	0	7	1	49
Lincoln	0	0	0	0	0	1	0	1	0	0	0	2
Mason	0	2	0	9	0	4	0	11	2	8	2	34
Okanogan	0	0	0	1	0	2	0	3	0	1	0	7
Pacific	0	1	0	7	0	4	0	4	1	4	1	20
Pend Oreille	0	3	0	1	0	0	0	0	0	0	0	4
Pierce	1	10	0	10	0	13	0	8	0	8	1	49
San Juan	0	3	0	2	0	1	0	1	0	3	0	10
Skagit	0	2	1	8	0	5	1	8	0	7	2	30
Skamania	0	0	0	0	0	0	0	2	0	2	0	4
Snohomish	1	15	1	16	0	22	1	21	1	25	4	99
Spokane	0	7	0	9	0	19	0	12	1	34	1	81
Stevens	0	2	0	2	0	6	0	3	0	7	0	20
Thurston	2	37	0	18	0	11	0	13	1	17	3	96
Wahkiakum	0	2	1	1	0	2	0	1	0	2	1	8
Walla Walla	1	1	0	1	0	1	0	0	0	1	1	4
Whatcom	1	5	1	12	3	22	2	19	0	15	7	73
Whitman	0	2	0	0	0	2	0	0	0	5	0	9
Yakima	0	1	0	2	0	2	0	4	0	3	0	12
Total	11	204	9	221	12	284	15	276	9	305	56	1290

Table 5. Washington State Animals Tested for Rabies, 1988-2015

(Rabid animals in parentheses)

Year	Bat	Cat	Dog	Ferret	Raccoon	Skunk	Rodent	Lagomorph	Other Wild	Other Domestic	Total
1988	69 (4)	165	110	15	16	3	12	2	5	3	400 (4)
1989	102 (9)	124	91	20	9	4	8	1	9	4	372 (9)
1990	63 (4)	104	82	5	7	5	5	1	14	4	290 (4)
1991	90 (9)	105	96	13	8	3	13	0	19	2	349 (9)
1992	73 (6)	132	90	16	14	2	12	0	14	6 (1)*	359 (7)
1993	68 (1)	122	95	8	4	8	16	2	10	13	346 (1)
1994	58 (14)	105	90	7	4	3	15	0	16	14 (1)^	312 (15)
1995	263 (15)	140	114	12	8	1	23	3	15	18	597 (15)
1996	257 (13)	104	101	8	9	2	14	3	20	12	530 (13)
1997	780 (51)	155	118	7	17	4	15	2	18	11	1,127 (51)
1998	447 (27)	126	109	8	11	1	6	0	19	16	743 (27)
1999	334 (25)	103	71	3	11	3	8	1	14	13	561 (25)
2000	330 (23)	105	60	1	2	4	6	1	9	4	522 (23)
2001	263 (22)	111	93	2	3	1	8	0	4	5	490 (22)
2002	186 (12)	99 (1)	53	7	2	2	9	1	8	9	376 (13)
2003	229 (23)	137	72	0	11	1	4	1	9	10	474 (23)
2004	311 (20)	141	70	3	13	6	11	0	6	10	571 (20)
2005	245 (15)	132	66	3	12	2	5	1	10	4	480 (15)
2006	273 (15)	105	70	4	13	1	2	1	8	5	482 (15)
2007	315 (22)	132	97	1	16	3	5	0	9	3	581 (22)
2008	337 (17)	143	76	1	10	2	5	1	9	11	595 (17)
2009	311 (14)	133	90	1	12	5	4	1	7	9	573 (14)
2010	200 (14)	103	63	0	14	1	6	1	9	10	407 (14)
2011	204 (11)	87	51	1	9	1	2	0	8	5	368 (11)
2012	221 (9)	98	54	2	7	0	4	0	7	9	402 (9)
2013	284 (12)	80	65	0	13	0	3	0	5	9	459 (12
2014	276 (15)	75	53	0	12	0	1	1	6	11	435 (15)
2015	305 (9)	95 (1)	49	0	8	2	8	0	11	7	485 (10)
Total 1988-2015	**6,894 (431)**	**3,261 (2)**	**2,249**	**148**	**275**	**70**	**230**	**24**	**298**	**237 (2)**	**13,686 (435)**

* Horse

^ Llama

Rodents include: beaver, chinchilla, chipmunk, degu, gerbil, gopher, hamster, marmot, mouse, muskrat, nutria, porcupine, prairie dog, rat, squirrel, vole, woodchuck

Lagomorphs include: rabbit and pika

Other domestic include: burro, cattle, goat, horse, llama, mule, pig, sheep, zebra

Other wild include: badger, bear, bison, bobcat, cougar, coyote, deer, fox, kinkajou, lynx, marten, mink, mole, monkey/non-human primate, ocelot, opossum, otter, seal, shrew, sugar glider, weasel, wolf, wolf-hybrid, zorilla (striped polecat)

Rare Diseases of Public Health Significance

Rare diseases of public health significance are defined as diseases or conditions of general public health concern, which are not commonly diagnosed in Washington residents.

Anaplasmosis/Ehrlichiosis

Cause: *Anaplasma phagocytophilum* (cause of human granulocytic anaplasmosis, formerly called human granulocytic ehrlichiosis) and several *Ehrlichia* species (causes of ehrlichiosis). All are closely related bacteria that infect white blood cells. The terms "anaplasmosis" and "ehrlichiosis" are sometimes used interchangeably, and antibodies can be cross-reactive on serologic testing.

Illness and treatment: Illnesses with anaplasmosis and ehrlichiosis are very similar. Signs and symptoms can include fever, headache, muscle pain, and fatigue. Anaplasmosis and ehrlichiosis are treated with antibiotics, typically doxycycline.

Sources: *A. phagocytophilum*, the cause of anaplasmosis, is maintained in an enzootic cycle involving *Ixodes* ticks and mammal reservoirs, a cycle similar to that of *Borrelia burgdorferi* (the cause of Lyme disease). In the Pacific Coastal United States, the primary vector is *Ixodes pacificus* (western blacklegged tick), which lives in wooded or brushy areas. *Ehrlichia chaffeensis* and *E. ewingii*, both causes of ehrlichiosis, are transmitted by *Amblyomma americanum* (Lone star tick), found in south central and southeastern states. The newly-identified *E. muris*-like agent, also a cause of ehrlichiosis, is transmitted by *I. scapularis* in the Upper Midwest. Rarely, *A. phagocytophilum* and *Ehrlichia* species can also be transmitted via blood transfusion or solid organ transplant.

Prevention: During outdoor activities in tick habitat, avoid tick bites by wearing light-colored clothing and using repellents containing DEET or permethrin. Check the body thoroughly for ticks. Be alert for sudden onset of fever; if signs or symptoms develop, see a health care provider.

Recent Washington trends: From 2004 to 2014, four cases of anaplasmosis were reported, two with exposure in the Upper Midwest (both in 2013) and two with exposures in the northeastern United States (2004, 2007). One case of ehrlichiosis due to *E. chaffeensis* was reported in 2011, associated with travel to the southeastern United States.

2015: One case of anaplasmosis following travel out-of-state and no cases of ehrlichiosis were reported. To date, no locally-exposed Washington cases of anaplasmosis have been reported; however, very low levels of *A. phagocytophilum* have been found in *Ixodes* ticks collected from Washington State.

Babesiosis

Cause: *Babesia* species, including *Babesia microti*, *B. duncani*, and other rare species. *Babesia* are protozoan parasites that infect red blood cells.

Illness and treatment: Malaria-like illness ranging from flu-like symptoms such as fever, chills, sweats, and body aches to severe, life-threatening disease in people who are elderly, asplenic, or have other forms of immune compromise. Illness can involve severe anemia. Treatment is with antibiotics. Healthy persons may have asymptomatic infections, which can last weeks to months.

Sources: *Babesia* parasites are transmitted by infected ticks. *B. duncani* (formerly "WA1") and the *B. divergens*-like agent have been transmitted within Washington, but their tick vectors are unknown. *B. microti* is the mostly commonly identified *Babesia* species in the United States and

is transmitted by *Ixodes scapularis* in the Upper Midwest and northeastern United States. *Babesia* parastites may also be transmitted via blood transfusion from infected, asymptomatic blood donors. Transmission from mother to infant during pregnancy or delivery can also occur.

Prevention: During outdoor activities in endemic areas, wear appropriate clothing, use repellents, and check the body for ticks.

Recent Washington trends: From 1990 to 2014, 11 babesiosis cases were reported. Four of these cases were exposed to *Babesia* in Washington: three cases caused by *B. duncani* (one in 1991 and two in 1994, in a blood transfusion recipient and associated donor); and one caused by the *B. divergens*-like organism (2002). The other babesiosis cases were associated with travel to the Upper Midwest or northeastern United States or blood donation from an out-of-state donor and were likely or confirmed *B. microti* (2004, 2008, 2013, 2014).

2015: Two babesiosis cases *(B. microti*) were reported in a blood transfusion recipient and associated donor. The donor was exposed outside of Washington (Massachusetts). To date, tick surveillance has not identified *Babesia*-positive ticks in Washington.

Coccidioidomycosis (Valley Fever)

Cause: The soil-dwelling fungi *Coccidioides immitis* and *C. posadasii.*

Illness and treatment: If symptomatic, a pneumonia or flu-like illness with fever, cough, headache, rash, and muscle aches. Disseminated infections occur. Treatment is with antifungals.

Sources: Generally, exposure to airborne spores. The fungi are found in soil in semi-arid climates in the southwestern United States and parts of Central and South America. New evidence has documented the presence of *C. immitis* in soil in multiple counties in south-central Washington State.

Prevention: Avoid exposure to dusty environments in endemic regions; be alert for symptoms and consult a healthcare provider for early diagnosis and treatment.

Recent Washington trends: Coccidioidomycosis was made reportable as a rare disease of public health significance in 2014. Prior to 2014, up to six travel-associated cases were reported each year. During 2010 to 2014, nine cases with exposure in south-central Washington State were reported.

2015: Twenty-five cases were reported; all were travel-related.

Creutzfeldt-Jakob Disease (CJD)

Cause: Prions, or "proteinaceous infectious particles," in which normal cellular prion proteins in the brain (PrPc) fold into abnormal, pathologic forms (PrPsc), causing a fatal neurodegenerative disease known as prion disease or transmissible spongiform encephalopathy (TSE). TSEs are a family of disorders in animals and humans, of which Creutzfeldt-Jakob disease (CJD) is the most common type.

Illness and treatment: Prion diseases present with a wide variety of clinical manifestations. Rapid progressive dementia is the key clinical feature. Other manifestations include movement abnormalities (myoclonus, tremor), cerebellar signs (ataxia, nystagmus) visual changes (diplopia, hallucinations), sleep disturbances, and akinetic mutism. Variant CJD has more prominent psychiatric and behavioral symptoms at onset with a delay in neurologic signs. All cases are fatal, and treatment is supportive.

Sources: Prion diseases can be sporadic (85 percent of cases; unknown cause), familial (ten to 15 percent of cases; inherited), or iatrogenic (acquired through contaminated surgical instruments, dura mater or corneal transplants, or human growth hormone supplements). Variant CJD (vCJD)

is associated with ingesting beef products contaminated with the prion that causes bovine spongiform encephalopathy ("mad cow disease"). VCJD was discovered in 1996, with most cases in the United Kingdom and some cases in other European countries, the Middle East, Asia, and North America. To date, four vCJD cases have been reported in the United States, all of which were acquired overseas.

Prevention: Since most cases are sporadic (unknown cause), few personal precautions can be advised. To prevent transmission during invasive medical procedures, a combination of specific chemical and autoclaving methods are used in health care facilities to disinfect and sterilize medical instruments. If traveling for prolonged periods of time in Europe, risk might be reduced by avoiding beef products, especially brain parts or other non-muscle meat; however, transmission risk is very low.

Recent Washington trends: During 2006 to 2015, the median number of cases per year was ten (range, five to 17 cases). The incidence of human prion disease in Washington State is consistent with reported rates worldwide, with an average incidence of 1.6 cases/million population in the last decade.

2015: Twelve cases of CJD were reported, 11 sporadic and one familial.

Table 6. PRION DISEASE – Definite and Probable cases

Year of death	Sporadic	Familial	Iatrogenic	Variant	Combined Rate*
2006	9	0	0	0	1.40
2007	5	0	0	0	0.77
2008	17	0	0	0	2.57
2009	7	2	0	0	1.35
2010	7	1	0	0	1.19
2011	9	0	0	0	1.33
2012	12	1	0	0	1.91
2013	13	1	1	0	2.18
2014	10	1	0	0	1.58
2015	11	1	0	0	1.70

*All rates are cases per 1,000,000 population.

Cryptococcosis

Cause: Fungus *Cryptococcus*. Notifiable condition surveillance is only for *C. gattii*.

Illness and treatment: Symptoms include severe cough with shortness of breath, chills, night sweats, and loss of appetite. Typical presentations are meningitis and pneumonia. Treatment is with antifungals.

Sources: *C. gattii* is an environmental fungus that has been isolated from native trees, soil, and air in the Pacific Northwest. Exposure is through inhalation of spores from the environment.

Prevention: There are no specific precautions.

Recent Washington trends: Since 2005, 59 animal cases have been identified in the state, including porpoises, cats, dogs, a sheep, an elk, a horse, and a bird. *C. gattii* has been found in a few surface swabs, including investigators' shoes and vehicle wheel wells, a fence post and a parking lot in northwestern counties. Since 2006, one to seven human cases are reported each year, some with presumed in-state exposure. The case fatality rate among all cases is 14 percent. The majority of the cases occur in residents of northwestern counties, although cases can occur anywhere in the state following travel to an endemic area.

2015: Four cases were reported.

Spotted Fever Rickettsioses

Cause: Bacteria of the spotted fever group *Rickettsia*, including *Rickettsia rickettsii* (Rocky Mountain spotted fever) (RMSF), *R. africae* (African tick bite fever), *R. conorii* (Mediterranean spotted fever or Boutonneuse fever), and numerous other disease-causing *Rickettsia* species.

Illness and treatment: Spotted fever rickettsioses are characterized by fever plus a rash and/or scab-like skin wound ("eschar"); other signs and symptoms can include headache, fatigue, muscle aches, and swollen lymph nodes. RMSF is the most commonly reported spotted fever rickettsiosis in the United States and often begins with fever followed in two to five days by a spotty rash that typically begins on the wrists and hands before spreading to the rest of the body, including palms and soles. Many of the other spotted fever rickettsioses, including African tick bite fever and Mediterranean spotted fever, can involve blackened or crusted skin at the site of one or more tick bites. Severe complications can occur in some spotted fever rickettsioses. Antibiotic treatment for spotted fever rickettsioses should be initiated immediately after clinical suspicion and should not await laboratory confirmation.

Sources: In the United States, RMSF tick vectors include *Dermacentor variabilis* (American dog tick) and *D. andersoni* (American wood tick), both of which are found in Washington State, and *Rhipicephalus sanguineus* (brown dog tick). Other spotted fever group *Rickettsia* are transmitted by various hard tick species vectors, which may involve different vertebrate reservoirs.

Prevention: During outdoor activities in endemic areas, wear appropriate clothing, use repellents, and check the body for ticks.

Recent Washington trends: RMSF was reported at greater numbers in the first half of the twentieth century than in recent years, e.g., 90 cases during 1920-1949 (median annual cases, two; range, zero to nine), in contrast to eight cases during 2004 to 2013 (median cases per year, zero; range, zero to three). About half of RMSF cases in the past decade likely acquired their infections in Washington, in eastern and central counties. African tick bite fever was reported in nine Washington residents from 2005 to 2014, all of whom acquired their infections in South Africa (two in 2005 and 2014 and one in each year for 2007, 2008, 2010, 2012, and 2013). Mediterranean spotted fever was reported in one case with travel to South Africa in 2011. In 2013, one spotted fever rickettsiosis case of undetermined etiology was reported in a case with exposure in Southeast Asia.

2015: Four spotted fever rickettsioses cases were reported. Two RMSF cases were reported with out-of-state travel. One African tick bite fever case was reported with travel to Ethiopia. One Mediterranean spotted fever case was reported with unknown travel.

Typhus

Cause: Bacterium *Rickettsia prowazekii* causes epidemic typhus, and *Rickettsia typhi* and *Rickettsia felis* cause endemic typhus.

Illness and treatment: Endemic typhus symptoms include rash, fever, nausea, diarrhea and vomiting, while epidemic typhus has similar but more severe symptoms including delirium, hypotension, and internal bleeding and can be fatal.

Sources: Transmitted to humans by lice (mainly epidemic typhus) and fleas (mainly endemic).

Prevention: Exclude rats, mice and other animals that harbor lice and fleas from the home.

Recent Washington trends: Other than one case in 2013, and one case in 2015, no cases reported in the last decade.

2015: One endemic typhus case was reported following travel to Papua New Guinea.

Vaccinia Transmission

Cause: Vaccinia (smallpox vaccine) virus.

Illness and treatment: Symptoms are vesicles where the vaccine virus was inadvertently inoculated. Treatment is supportive; special medications may be needed for severe infections.

Sources: Rare transmission from vaccinated military personnel to a secondary case through close contact (e.g., sexual partner, parent-infant, sports); tertiary cases have occurred but are very rare.

Prevention: A smallpox vaccine site should be covered until fully healed, and the scab monitored and safely discarded. Unvaccinated persons should avoid contact with a fresh vaccine site or scab.

Recent Washington trends: One secondary case occurred in each of 2010 and 2012.

2015: No cases were reported.

Other Reports

One case of Acanthamoeba skin infection was reported in an immunocompromised person. The organisms are ubiquitous in soil and natural waters.

One case of Chagas disease was reported associated with residence in Bolivia.

One case of histoplasmosis was reported with likely exposure in Missouri.

Rare Sexually Transmitted Diseases

Cause: Bacterium *Haemophilus ducreyi* causes chancroid. Bacterium *Calymmatobacterium granulamatis* causes granuloma inguinale. L1, L2 and L3 serovars of bacterium *Chlamydia trachomatis* cause lymphogranuloma venereum.

Illness and treatment: These are three rare genital ulcer diseases. Treatment recommendations are available from CDC.

Sources: The infections are sexually transmitted.

Additional risks: These diseases are endemic in some tropical and subtropical regions.

Prevention: Use safe sexual practices to reduce transmission.

Recent Washington trends: In the past decade, there were two chancroid cases, no granuloma inguinale cases, and 14 lymphogranuloma venereum cases.

2015: One lymphogranuloma venereum case, no chancroid cases, and no granuloma inguinale cases were reported.

Relapsing Fever

Cause: Spiral-shaped bacteria (spirochetes). *Borrelia hermsii* for tick-borne relapsing fever (TBRF) and *B. recurrentis* for louse-borne relapsing fever.

Illness and treatment: A typical sign is a fever lasting two to seven days cycling with a febrile periods of four to 14 days, with one to 10 cycles if untreated. Along with fever, other signs and symptoms can include shaking chills, sweats, headache, muscle or joint pain, or sometimes a rash. Treatment is with antibiotics.

Sources: For TBRF, the most common reservoirs in Washington appear to be wild rodents, with the bacteria transmitted by *Ornithodoros hermsi*, a soft tick typically found in eastern parts of the state at higher altitudes (1500-8000 feet). The ticks live in rodent nests and inflict painless bites at night that are often unnoticed. Louse-borne relapsing fever is not endemic to the United States but may occur in travelers if an infected body louse contaminates a wound or mucous membranes.

Prevention: Avoid sleeping in rodent infested buildings. Rodent-proof structures to prevent future colonization by rodents and their soft ticks.

Recent Washington trends: Each year one to 12 TBRF cases are reported. Most are associated with overnight stays in rustic summer cabins, but some are exposed in their primary homes. Louse-borne disease is rare, even in travelers; no cases have been reported in recent years.

2015: Three cases of TBRF were reported, all with exposure in Washington State.

Rubella

Cause: Rubella virus, family Togaviridae, genus *Rubivirus*.

Illness and treatment: Acquired rubella is a mild illness that usually includes fever and a maculopapular rash that starts on the face and spreads downward to include the entire body. The rash usually lasts three days and may itch. However, up to 50 percent of infections can be sub-clinical or inapparent. Older children and adults may have malaise, lymph node swelling, and upper respiratory symptoms before the rash. Arthritis and arthralgia frequently accompany the disease in adults, especially in women. Complications including encephalitis (1 in 6000 cases) are uncommon and occur more often in adults. Congenital rubella syndrome (CRS) in an infant can result if the mother acquires rubella during pregnancy, especially in the first trimester. The virus may cause a variety of congenital malformations, the most common of which is deafness. Fetal death, spontaneous abortion, or premature delivery may also occur.

Sources: Humans are the reservoir. Transmission is through droplet spread of the respiratory secretions of infected persons (or less commonly airborne), including those with asymptomatic or subclinical infections. Infants with CRS can shed virus for extended periods, but a true carrier state does not occur.

Additional risks: Since 2004, rubella is no longer considered endemic in the United States. Most reported rubella cases in the country are now among adults born in areas where rubella vaccine was

not routinely used, or in unimmunized persons who travel outside the United States to areas where rubella is still endemic.

Prevention: Universal childhood immunization has been effective in preventing infection and eliminating endemic circulation of rubella in this country. Respiratory and hand hygiene can also reduce the risk of transmission. Pregnant women are routinely tested at initial prenatal visits to verify immunity to rubella.

Recent Washington trends: Since 2000 only zero to two cases of acquired rubella have been reported annually. In 2000, an infant with CRS was born in Washington to a Hispanic mother born outside the United States. This was the only CRS case reported in the state in the past 20 years.

2015: No cases were reported.

Salmonellosis (Non-Typhoid)

Cause: Myriad serotypes in the bacterial genus *Salmonella*, excluding *S.* Typhi (see Typhoid).

Illness and treatment: Typical symptoms are fever, headache, diarrhea, nausea and abdominal pain, with or without vomiting. Most persons recover without treatment. Occasionally bacteria enter the bloodstream and infect internal organs. Treatment for severe cases is with antibiotics.

Sources: Healthy animals, especially reptiles, chickens, cattle, dogs and cats, can carry *Salmonella* without illness and be a direct source for human infection. Most human cases result from contaminated food. Common exposures include contaminated eggs, unpasteurized milk, poultry and produce. Person-to-person transmission can occur.

Additional risks: Illness including serious dehydration may be severe in the very young, the elderly, or those with chronic diseases. Incidence is highest in infants and young children.

Prevention: Use good food handling and personal hygiene practices, including thorough handwashing after contact with animals. Prevent contact between young children or persons with weakened immune systems and reptiles, farm animals, or birds.

Recent Washington trends: Salmonellosis is the second most common notifiable enteric infection with 589 to 1,100 cases reported per year. Infections occur year round with some increase during the spring and summer months. Many serotypes are reported (Table 7).

2015: 1,034 cases were reported (14.6 cases/100,000 population) with one death.

Table 7. Salmonella Serotypes, 2015

Serotype (*n*=937)	Count
I 4,5,12:i:-	224
Enteritidis	208
Typhimurium	74
Heidelberg	36
Newport	31
Poona	26
Saintpaul	24
Braenderup	20
Infantis	18
Thompson	17
I 4,5,12:b:-	15
Oranienburg	15
Hadar	14
Javiana	13
Montevideo	12
Agona	11
Unknown	11
I 4,12:i:-	10
Muenchen	10
Paratyphi B Tar + Java	8
Berta	6
Dublin	6
Havana	6
Panama	6
Multiple others (below)	

Two to Five Cases Each: Brandenburg, Mbandaka, Pomona, Adelaide, Muenster, Paratyphi A, Stanley, Guinea, Sandiego, Amager, Anatum, Apapa, Barielly, Blockley, Cotham, Ealing, Gaminara, Give, IV 50:g z51:-. Kentucky, Manhattan, Nottingham, Reading, Senftenberg, Tennessee, Weltevreden

One Case Each: Alachua, Baildon, Bovismorbificans, Bredeney, Cerro, Chester, Corvallis, Derby, Haelsingborg, Hartford, I 42:Z4,Z23:--, I 8:k:1,5, I Rough:z29-, II 17:k:-, II 47:b:e,n,x,z15, IIIa 48:g,z51:-, IIIa41:z4,z23:-, IIIb 11:1,v:z53, Indiana, Isangi, Istanbul, IV 11:Z4,Z23, IV 44:z4,z23:-, IV 44:z4,z24:-, IV 48:g,z51:-, London, Matopeni, Oakland, Okatie, Oslo, Paratyphi B, Portland, Potsdam, Rissen, Ruiru, Schwarzengrund, Subgenus 1 Rough:NM, Sundsvall, Telelkebir, Uganda, Urbana, Uzaramo, Virchow, Wangata, Waycross

Note: Serotype data are only available for confirmed cases.

Shellfish Poisoning, Paralytic, Domoic Acid, or Diarrhetic

Cause: Saxitoxin from the phytoplankton *Alexandrium catenella* causes paralytic shellfish poisoning (PSP). Domoic acid from the diatom *Pseudo-nitzschia* causes domoic acid poisoning (DAP). Diarrhetic toxin from dinoflagellates *Pseudo-niszschia* causes diarrhetic shellfish poisoning (DSP).

Illness and treatment: PSP symptoms begin minutes or hours after consumption with numbness of the mouth and limbs. Severe poisoning progresses rapidly to paralysis and respiratory arrest. With DAP, gastrointestinal symptoms of vomiting, diarrhea and abdominal cramps begin within 24 hours of shellfish ingestion and there may be later confusion, seizures and permanent short-term memory loss. DSP begins in 30 minutes to 36 hours, with severe diarrhea and sometimes vomiting. There are no anti-toxins. Acute supportive care may be needed.

Sources: Bivalve mollusks such as clams, oysters, mussels, and geoduck concentrate the PSP toxin. Razor clams, other clams, Dungeness crab, mussels, and oysters concentrate the DAP toxin. There is no person-to-person spread for either.

Additional risks: PSP is only rarely associated with reddish discoloration of the water, although the term “red tide” is popularly used. PSP or DAP can be present in dangerous amounts even when the harvest site water looks clean. Cooking does not destroy either toxin.

Prevention: Before harvesting shellfish check the Marine Biotoxin Hotline (1-800-562-5632) or website for updates on affected sites and site closures, which may not always have signs posted.

Recent Washington trends: Three clusters of PSP have been reported during the past 20 years (seven reports in 2012, seven reports in 2000, and five reports in 1998). There are no recent DAP cases reported. A DSP cluster in 2011 was from mussels gathered in Puget Sound.

2015: One probable PSP case was reported.

Shiga Toxin-producing *Escherichia coli* (STEC)

Cause: Shiga toxin-producing *E. coli* strains (STEC) including *E. coli* O157:H7.

Illness and treatment: Symptoms include abdominal cramping and severe or bloody diarrhea, usually without fever. Serious complications include hemolytic uremic syndrome (HUS) or thrombotic thrombocytopenic purpura (TTP). Most persons will recover without treatment. Treating STEC diarrhea with antibiotics may increase the risk of developing HUS.

Sources: Cattle are the most important source, although other herbivores also may carry STEC. Other known sources are unpasteurized milk, undercooked ground beef and contaminated raw produce. There can be person-to-person and animal-to-person transmission, but most cases are due to ingesting contaminated food or water.

Additional risks: Children under five years of age are diagnosed most frequently and are at the greatest risk of developing HUS.

Prevention: Wash hands thoroughly after contact with farm animals, visiting farm environments, and handling raw meat. Thoroughly cook ground beef and venison and wash preparation areas to avoid contaminating other foods. Wash produce thoroughly before eating.

Recent Washington trends: For the past several years there have been 150 to 250 reports each year. STEC has a seasonal pattern. Most cases occur during summer and fall months.

2015: Two STEC outbreaks contributed to a reported case count (confirmed and probable) of 419 cases.

Table 8. STEC Serotypes, 2015

Serotypes (*n*=344)	Count
O157:H7	135
O26	85
O157:NM	22
O121	21
O103	19
O111	15
O125ac	5
O157	4
O69:H11	3
O118:H16	2
O121:H19	2
O156:H25	2
O186:H2	2
Multiple others (below)	

One Case Each: O Rough:H40, O103:H2, O118:H2, O119, O127:H8, O128ab, O130:H11, O136:H12, O140:H Undetermined, O141:H2, O145, O146:H21, O165:H25, O165:NM, O176:NM, O177:NM, O186:NM, O26:H11, O43:H2, O5:NM, O50:H7, O76:H7, O79:H2, O84:NM, O98:NM, O Rough:H19, O Undetermined:H49, Pending at CDC.

Note: Serotype data are only available for confirmed cases.

Shigellosis

Cause: Bacteria in the genus *Shigella*, typically *S. sonnei* or S. *flexneri*. Other species including *S. boydii and S. dysenteriae* are more common in developing countries.

Illness and treatment: Symptoms include fever, watery or bloody diarrhea, abdominal pain, fatigue and headache. Most persons will recover without treatment. Antibiotics may be used to shorten the duration of intestinal excretion of the organism.

Sources: Humans are the only reservoir, transmitting through feces-contaminated food or water or through person-to-person transmission, including oral-anal sex. Outbreaks are occasionally associated with child care or food service facilities, and very rarely with swimming.

Additional risks: Ingesting very few organisms can cause infection. Outbreaks occur under conditions of crowding and poor hygiene, putting institutions for children, mental hospitals, and prisons at additional risk.

Prevention: Wash hands carefully including cleaning under the nails with soap and water after defecation or changing diapers and before food handling.

Recent Washington trends: Each year there are 100 to 185 reports.

2015: 152 cases were reported (2.2 cases/100,000 population).

Syphilis

Cause: Spirochete bacterium *Treponema pallidum*.

Illness and treatment: The disease has four stages. Primary syphilis involves a painless ulcer at the site of infection. Secondary syphilis involves fever, diffuse rash, headache, hair loss, and muscle aches. Latent syphilis is asymptomatic and not transmitted sexually. Late syphilis can result in damage to the brain, heart, or other organs. Congenital syphilis may result in organ damage and bone deformities. Antibiotics treat a syphilis infection but any damage to organs is permanent.

Sources: Syphilis is sexually transmitted or acquired before birth.

Additional risks: Disease rates are highest among men, with a higher incidence among men who have sex with men.

Prevention: Use safe sexual practices to reduce transmission. If syphilis is found, also test for other sexually transmitted infections including HIV. Test and treat all recent sexual partners of a person diagnosed with the early stages of syphilis to stop ongoing transmission.

Recent Washington trends: Rates have increased since 1996, when nine cases were reported. Recently over 250 primary and secondary cases have been reported annually.

2015: 452 cases of primary and secondary syphilis were reported (6.5 cases/100,000 population).

Tetanus

Cause: Neurotoxin produced by the bacterium *Clostridium tetani*.

Illness and treatment: Of the four types of known tetanus presentation, by far the majority of cases present as generalized tetanus which is characterized by descending rigidity and painful spasms of the skeletal muscles beginning with jaw and neck spasms (commonly referred to as "lockjaw.") Spasms can continue for three to four weeks and progress to total body spasms known as "opisthotonos." Complications include bone fractures and abnormal heart rhythms. Complete recovery can take months. Case fatality rate for generalized tetanus is 10 percent or higher, depending on available care, with more deaths occurring in infants and elderly persons.

> Neonatal tetanus is a form of generalized tetanus that occurs in newborn infants who are born to unvaccinated mothers and therefore lack protective passive immunity.
>
> Local tetanus and cephalic tetanus are less common presentations which often progress to generalized tetanus.

Treatment includes tetanus immune globulin (TIG), wound care, and supportive care including pharmacotherapy to control spasms. Antibiotics may theoretically reduce bacterial multiplication in the wound and thereby prevent further toxin production. Active immunization should be undertaken soon as the person is medically stable.

Sources: Spores are widely distributed in soil and in the intestinal tracts (and feces) of animals and humans. The spores can also be found on skin and in contaminated heroin. *C. tetani* usually enters the body through a wound (which may or may not be apparent) and grows best deep within damaged tissue in an anaerobic environment. Tetanus is not transmitted person to person.

Additional risks: Almost all reported cases of tetanus are in persons with either no history of vaccination with tetanus toxoid, or without a vaccine booster in the preceding decade. Any person presenting with a wound that has fewer than three documented doses of tetanus toxoid should be considered at risk for tetanus. Injection drug use, especially intramuscular and subcutaneous use, can

lead to individual cases and occasionally to outbreaks in specific populations.

Prevention: Universal childhood immunization with regular booster doses for adolescents and adults is effective in preventing of tetanus.

Recent Washington trends: Three cases were reported in 2014, including one in a toddler who was never vaccinated and one in an elderly adult whose most recent booster was received 8.5 years prior to onset. Before that, one case was reported in each of the years 2012, 2006 and 2000.

2015: No cases were reported.

Trichinosis (Trichinellosis)

Cause: Intestinal roundworm *Trichinella spiralis.*

Illness and treatment: Ingested larvae migrate and become encapsulated in muscle. Infection ranges from asymptomatic to severe, depending on the dose. Diarrhea may occur first. There is usually sudden onset of muscle pain, swelling of the upper eyelids, and recurring fever. Death can result from damage to heart muscle. Treatment depends on the stage of illness at diagnosis.

Sources: The infection is caused by ingesting raw or insufficiently cooked meat from infected animals. Historically, undercooked pork was a risk. Wild game is now the most likely exposure in North America. There is no person-to-person spread.

Additional risks: Freezing meat will not necessarily inactivate larvae of arctic strains.

Prevention: Cook or irradiate all wild game to reliably kill larvae. Regulations to prevent trichinosis require the cooking of garbage and offal fed to swine.

Washington trends: In the past decade only two cases have been reported. Exposures were bear and cougar meat eaten raw or undercooked.

2015: One case was reported, with exposure to a meal of wild snake.

Tuberculosis

Cause: Bacterium *Mycobacterium tuberculosis*.

Illness and treatment: Tuberculosis (TB) usually affects the lungs, but can also affect lymph nodes, bones, joints, as well as other parts of the body. When contained by a mature, strong immune system, infection with TB most often never causes symptoms and remains non-infectious. However, TB infection may also progress to active TB disease that can be infectious and must be treated. Typical symptoms of active TB disease include persistent cough, bloody sputum, fever, unexplained weight loss, night sweats, and chest pain. Persons experiencing any of these symptoms should consult a medical provider or local health department immediately.

Effective medical treatments are available to prevent TB infection from developing into active TB disease, and to cure active TB disease if it develops. Persons infected with TB should consider treatment to prevent the development of active TB disease. Patients with active TB disease must complete a full course of appropriate treatment with multiple drugs.

Sources and spread: TB is spread person-to-person through the air. When a person with infectious active TB disease of the lungs or throat coughs, sneezes or sings bacteria are spread into the air which then may be breathed-in by others.

Additional risks: Approximately 75 to 80 percent of all cases in Washington are among foreign-born persons, originating from countries other than the United States where rates of TB are typically higher and risk of becoming infected is greater. If infected with TB, persons with an immature, weakened or over-burdened immune system—for example young children, people infected with HIV, diabetics, organ transplant recipients and the elderly—are at increased risk of developing active TB disease.

Prevention: Prompt diagnosis of active TB disease with proper isolation during the initial infectious period and completion of effective treatment are each vital to minimizing the spread TB. In addition, risk-based screening for TB infection along with completion of appropriate treatment if infected also aid in preventing the future spread of TB.

Washington trends: From 2011 through 2015 between 185 and 210 cases of active TB disease were diagnosed in Washington annually. For 2015 the state rate of 2.9 cases per 100,000 population fell below the national rate of 3.0, while nearly matching Washington's lowest recorded rate of 2.7 set in 2012.

2015: Washington State reported 208 cases of active TB disease, for a crude case rate of 2.9. Only four of Washington's 39 counties reported ten or more cases, together accounting for 75 percent of all state cases along with 55 percent of the state's total population. King County reported 98 cases, this representing 47 percent of all Washington cases while resulting in a county rate of 4.8.

Tularemia

Cause: Bacterium *Francisella tularensis*.

Illness and treatment: Symptoms reflect the route of transmission and can include fever, malaise, swollen lymph nodes, skin ulcers, eye infection, sore throat, abdominal pain, diarrhea, and pneumonia; any infection can cause sepsis. Treatment is with antibiotics.

Sources: The reservoir is wild mammals (especially rabbits, hares, voles, squirrels, muskrats, beavers). Infection can occur through direct contact with an infected animal, bite from an arthropod (e.g., tick, deerfly), ingestion of contaminated raw meat or water, or inhalation, including during outdoor work or with improper handling of cultures in laboratories.

Prevention: Wear gloves if skinning wild game and keep hands or gloves away from the eyes. Drink only treated water when in wilderness areas. Avoid tick and insect bites.

Recent Washington trends: There are generally one to 10 reports annually. Exposures include insect and animal bites, contaminated water, exposure to wild rabbits or rodents, and inhalation while farming or landscaping with power tools. In 2004 to 2005 a statewide serosurvey of 370 outdoor pet cats and dogs found 0.6 percent positive overall but 4.5 percent positive in southwest counties.

2015: Four cases were reported, including one death. All cases were exposed in Washington State.

Typhoid Fever

Cause: Bacterium *Salmonella* Typhi.

Illness and treatment: Symptoms include fever, headache, rash, constipation or diarrhea, and lymph node swelling. Severity ranges from mild febrile illness to severe disease with multiple complications. Treatment is with antibiotics.

Sources: Humans are the reservoir and transmit through fecal contamination of food, water or milk, or directly person-to-person.

Additional risks: There can be a prolonged intestinal carrier state, sometimes due to gallbladder infection; re-culture patients after antibiotic treatment to confirm clearance of the infection.

Prevention: If traveling to risk areas, consult with a travel clinic or the CDC Travelers' Health website for recommendations about vaccination and other measures.

Recent Washington trends: Cases occur mainly after international travel, most commonly to Asia. Case counts are variable, ranging from five to 22 reports each year.

2015: Ten cases were reported.

Vibriosis (Non-Cholera)

Cause: Bacteria in the family *Vibrionaceae*, including *V. parahaemolyticus*, *V. vulnificus*, non-toxin-producing *V. cholera,* other less common *Vibrio* species, and *Grimontia hollisae*. Infections caused by toxin-producing *V. cholerae* (serotypes O1 or O139) are notifiable as Cholera.

Illness and treatment: Symptoms include abdominal pain, watery diarrhea, vomiting, headache and fever. Skin infections can occur. *V. vulnificus,* a species occurring mainly in the Gulf of Mexico, but recently found in Washington marine waters, can cause life-threatening septicemia in persons with weakened immune systems. Most persons recover without treatment but antibiotics may be needed for severe cases.

Sources: *V. parahaemolyticus* occur naturally in Pacific coastal waters, especially during warmer months. Transmission of vibriosis usually occurs through ingesting raw or undercooked oysters or through skin injuries exposed to seawater.

Additional risks: Persons with liver disease, alcoholics, and others with weakened immune systems should be warned not to eat raw or undercooked seafood.

Prevention: Keep shellfish cold throughout the transport from harvest to preparation. To lessen risk of illness, consume raw or undercooked shellfish only from approved harvest areas and only during cooler months of the year.

Recent Washington trends: Two large outbreaks occurred in years when environmental conditions favored growth of *Vibrio* (1997 and 2006). Annual case counts are variable, ranging from nine to 80 cases reported, with a mixture of locally acquired and travel associated exposures. Cases among out of state residents associated with consumption of Washington shellfish are not included in these counts.

2015: Sixty-eight cases (1.0 cases/100,000 population) were reported.

Waterborne Outbreaks

Cause: Many infectious agents including viruses, bacteria, and parasites. Commonly implicated agents include norovirus, *Giardia*, *Cryptosporidium*, and *Legionella*. Also includes waterborne disease outbreaks due to non-infectious agents, e.g., harmful algal bloom-associated toxins.

Illness and treatment: Illness depends on the etiologic agent, e.g., gastrointestinal, dermatologic, or respiratory. Treatment also depends on the involved agent.

Sources: Sources vary with the agent. Exposure can occur through various means, such as ingestion, skin contact, or inhalation. Waterborne outbreaks can occur from exposure to drinking water,

recreational water, or other water sources. Drinking water sources include water intended for drinking, such as bottled water or community or private water systems. Recreational sources include treated water (e.g., swimming pools, interactive fountains, hot tubs) and untreated natural water (e.g., lakes, rivers). Other sources can include water not intended for drinking or recreation, such as cooling towers, ornamental water, misters, etc.

Additional risks: Risks vary with the agent.

Prevention: Test private wells every year for coliform bacteria and nitrate, as well as after potential contamination such as after floods. Shower thoroughly with soap before entering recreational water. If ill with diarrhea, do not enter recreational water, pools, or interactive fountains. Check infants' diapers frequently when using recreational water.

Recent Washington trends: Waterborne outbreaks are often difficult to detect. From 2007 to 2015, 0 to 3 outbreaks were reported each year (median, 1 outbreak per year). Distinct outbreaks have ranged in size from very small (2 cases) to very large (hundreds of cases) (Table 9).

Table 9. Waterborne Disease Outbreaks, 1991-2015*

Year	Agent	Water Type	County	Cases
1991	*Giardia*	Recreational – Untreated	Clark	4
	Unknown	Recreational – Untreated	Thurston	4
1992	Hepatitis A	Drinking	Klickitat	10
1993	*Norovirus*	Recreational – Untreated	Thurston	604
	Cryptosporidium	Drinking	Yakima	7
	Giardia	Recreational – Untreated	Clark	6
1994	*Cryptosporidium*	Recreational – Untreated	Yakima	4
	Cryptosporidium/Giardia	Drinking	Walla Walla	86
1995	*Giardia*	Drinking	Yakima	87
1996	*Cryptosporidium*	Drinking	Yakima	18
1997	STEC	Drinking	Yakima	2
1998	Suspect viral	Recreational – Untreated	Kitsap	248
	Suspect viral	Recreational – Untreated	Snohomish	58
	Unknown	Drinking	Klickitat	6
1999	Unknown	Drinking	Lincoln	46
	E. coli O157:H7	Recreational – Untreated	Clark	36
	Suspect viral	Drinking	Spokane	68
2003	*Campylobacter*	Drinking	Walla Walla	110
2007	Suspect viral	Drinking	Okanogan	32
	Cryptosporidium	Recreational – Untreated	Clark	12
	Cryptosporidium	Recreational – Treated	Whatcom	14
2011	*Legionella*	Drinking	Spokane	3
2012	*Shigella sonnei*	Recreational – Untreated	Clark	3
2013	*Norovirus*	Recreational – Treated	King	11
2014	*Norovirus*	Recreational – Untreated	Kitsap	260+
	Norovirus	Recreational – Untreated	Clark	20
2015	*Legionella*	Drinking	Thurston	3
	Legionella	Other (cooling tower)	Chelan	10

*Excluding spa-associated folliculitis outbreaks and illness outbreaks associated with harmful algal blooms

Yersiniosis

Cause: Bacteria in the genus Y*ersinia*, usually *Y. enterocolitica or Y. pseudotuberculosis*.

Illness and treatment: Symptoms are acute fever, diarrhea and abdominal pain that may mimic appendicitis. Complications are uncommon. Antibiotics may be used for severe cases.

Sources: Wild and domestic animals, particularly pigs, are reservoirs. Transmission occurs by ingesting contaminated food or water, or by direct contact with animals. Raw or undercooked pork and pork products, such as chitterlings, have been particularly associated with the illness. Person-to-person transmission appears to be rare.

Additional risks: Illness is more severe in children. *Yersinia* can multiply under refrigeration.

Prevention: Do not eat undercooked or raw pork or unpasteurized milk. Wash hands thoroughly after touching animals or raw pork and before eating. Dispose of animal feces in a sanitary way.

Recent Washington trends: Rates have been stable with 15 to 30 reports each year.

2015: Forty cases were reported (0.6 cases/100,000 population).

APPENDIX I

Disease Incidence and Mortality Rates

ARBOVIRAL DISEASE TYPES

Year	Total Cases	Chikungunya	Colorado Tick Fever	Dengue	Japanese Encephalitis	St. Louis Encephalitis	West Nile Virus	Yellow Fever	Other/ Unknown flavivirus
2002	1	0	0	0	0	0	0	1[V]	0
2003	8	0	0	0	0	0	8[T]	0	0
2004	3	0	0	1[T]	1[T]	0	1[T]	0	0
2005	6	0	0	3[T]	0	0	3[T]	0	0
2006	13	1[T]	0	4[T]	0	0	8 (5[T], 3[E])	0	0
2007	16	0	0	10[T]	0	0	5[T]	0	1[T]
2008	19	0	1[T]	14[T]	1[T]	0	3[E]	0	0
2009	52	0	0	11[T]	0	1[T]	38 (36[E], 2[U])	0	2 (1[T], 1[E])
2010	24	3[T]	0	19[T]	0	0	2 (1[E], 1[T])	0	0
2011	9	0	0	9[T]	0	0	0	0	0
2012	20	0	0	16[T]	0	0	4 (2[E], 2[T])	0	0
2013	15	0	0	14[T]	0	0	1[T]	0	0
2014*	36	15[T]	0	9[T]	0	0	12 (10[E], 2[T])	0	0
2015	84	40[T]	0	19[T]	0	0	24 (22[E], 2[T])	0	1[T]

[V] Vaccine-associated

[T] Travel-associated

[E] Endemically acquired

[U] Unknown exposure location

*2014 data was updated from the 2014 annual report

BOTULISM

Year	Food	Infant	Wound	Combined Rate*	Deaths
1985	5	4	0	0.2	0
1986	2	4	0	0.1	0
1987	1	1	1	0.1	0
1988	3	4	0	0.2	0
1989	10	0	0	0.2	0
1990	1	0	0	0.0	0
1991	0	3	0	0.1	0
1992	0	2	0	0.0	0
1993	4	5	0	0.2	0
1994	3	2	0	0.1	0
1995	4	2	0	0.1	0
1996	2	0	2	0.1	0
1997	0	1	2	0.1	0
1998	2	4	0	0.1	0
1999	2	4	1	0.1	0
2000	1	4	0	0.1	0
2001	1	6	0	0.1	0
2002	1	1	4	0.1	0
2003	1	3	7	0.2	0
2004	1	3	5	0.1	0
2005	0	2	4	0.1	0
2006	0	9	1	0.2	0
2007	1	1	2	0.1	1
2008	0	1	2	0.0	0
2009	4	2	4	0.1	1
2010	0	3	1	0.1	0
2011	0	3	4	0.1	0
2012	1	4	2	0.1	1
2013	2	4	4	0.1	0
2014	0	3	0	0.0	0
2015	0	6	2	0.1	0

*All rates are cases per 100,000 population.

BRUCELLOSIS

Year	Cases	Rate*	Deaths
1986	1	0.0	0
1987	1	0.0	0
1988	1	0.0	0
1989	1	0.0	0
1990	0	0.0	0
1991	3	0.1	0
1992	1	0.0	0
1993	0	0.0	0
1994	0	0.0	0
1995	0	0.0	0
1996	2	0.0	0
1997	3	0.1	0
1998	3	0.1	0
1999	0	0.0	0
2000	0	0.0	0
2001	0	0.0	0
2002	2	0.0	0
2003	1	0.0	0
2004	2	0.0	0
2005	0	0.0	0
2006	0	0.0	0
2007	1	0.0	0
2008	1	0.0	0
2009	1	0.0	0
2010	0	0.0	0
2011	1	0.0	0
2012	0	0.0	0
2013	1	0.0	0
2014	4	0.1	0
2015	4	0.1	0

*All rates are cases per 100,000 population.

CAMPYLOBACTERIOSIS

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	9	47.5	4	*	3	*	4	*	10	51.5
Asotin	1	*	3	*	2	*	2	*	2	*
Benton	29	16.3	31	17.2	41	22.4	33	18.0	28	14.8
Chelan	9	12.4	5	6.8	10	13.6	15	20.2	8	10.7
Clallam	5	7.0	4	*	3	*	2	*	3	*
Clark	118	27.6	83	19.2	97	22.3	87	19.6	73	16.2
Columbia	0	0.0	0	0.0	2	*	2	*	4	*
Cowlitz	38	37.0	24	23.3	22	21.3	18	17.4	24	23.0
Douglas	3	*	6	15.4	4	*	8	20.2	7	17.5
Ferry	1	*	2	*	2	*	2	*	2	*
Franklin	23	28.6	11	13.3	21	24.8	11	12.7	11	12.6
Garfield	1	*	0	0.0	0	0.0	2	*	1	*
Grant	30	33.3	25	27.5	15	16.3	19	20.5	24	25.6
Grays Harbor	11	15.1	13	17.8	14	19.1	14	19.1	10	13.7
Island	10	12.7	18	22.7	8	10.0	16	20.0	17	21.1
Jefferson	7	23.3	5	16.6	21	69.4	18	58.6	16	51.8
King	403	20.7	447	22.8	455	23.0	487	24.1	604	29.4
Kitsap	45	17.7	34	13.4	41	16.1	40	15.6	48	18.6
Kittitas	8	19.4	14	33.7	7	16.7	10	23.8	9	21.1
Klickitat	7	34.1	2	*	9	43.5	6	28.8	4	*
Lewis	27	35.5	26	34.1	27	35.4	29	38.0	16	20.9
Lincoln	0	0.0	0	0.0	1	*	1	*	0	0.0
Mason	13	21.3	19	30.9	14	22.7	9	14.5	7	11.3
Okanogan	5	12.1	7	16.9	5	12.0	5	12.0	5	11.9
Pacific	13	62.2	4	*	5	23.8	8	37.9	3	*
Pend Oreille	2	*	4	*	0	0.0	2	*	2	*
Pierce	132	16.5	221	27.3	253	31.3	217	26.4	250	30.1
San Juan	5	31.4	3	*	4	25.0	1	*	5	30.9
Skagit	21	17.9	27	22.9	34	28.7	29	24.3	33	27.4
Skamania	2	*	2	*	0	0.0	0	*	0	0.0
Snohomish	219	30.5	159	22.0	180	24.6	190	25.6	231	30.5
Spokane	54	11.4	70	14.7	42	8.8	57	11.8	84	17.2
Stevens	7	16.1	4	*	8	18.3	3	*	17	38.6
Thurston	60	23.6	68	26.5	49	18.8	58	22.0	57	21.3
Wahkiakum	1	*	0	0.0	0	0.0	0	*	0	0.0
Walla Walla	11	18.7	11	18.6	20	33.6	14	23.3	14	23.1
Whatcom	86	42.6	77	37.8	56	27.2	59	28.4	60	28.6
Whitman	1	*	9	19.6	3	*	5	10.8	9	19.0
Yakima	121	49.4	109	44.3	153	61.9	108	43.4	149	59.6
STATEWIDE TOTAL	1,538	22.7	1,551	22.7	1,631	23.7	1,591	22.8	1,847	26.2

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

CAMPYLOBACTERIOSIS STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	8	0.2	0
1981	106	2.5	0
1982	299	7.0	0
1983	149	3.5	0
1984	146	3.4	1
1985	250	5.7	0
1986	347	7.8	0
1987	420	9.3	1
1988	709	15.4	1
1989	899	19.0	0
1990	899	18.5	0
1991	930	18.5	4
1992	1,060	20.6	1
1993	1,051	20.0	0
1994	1,050	19.6	0
1995	1,050	19.2	4
1996	1,139	20.5	1
1997	1,150	20.3	0
1998	901	15.7	1
1999	950	16.3	2
2000	1,006	17.1	2
2001	991	16.6	0
2002	1,032	17.0	1
2003	943	15.4	0
2004	861	13.9	0
2005	1,045	16.6	0
2006	993	15.5	0
2007	1,020	15.6	0
2008	1,069	16.2	0
2009	1,030	15.4	1
2010	1,315	19.6	2
2011	1,538	22.7	0
2012	1,551	22.7	3
2013	1,631	23.7	6
2014	1,591	22.8	0
2015	1,847	26.2	2

*All rates are cases per 100,000 population.

CHLAMYDIA TRACHOMATIS

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rates	Cases	Rates	Cases	Rates
Adams	56	295.5	64	336.0	78	406.3	76	391.8	60	306.1
Asotin	59	272.5	80	368.7	80	367.0	81	369.0	92	419.0
Benton	596	335.0	597	331.7	672	366.4	648	347.5	677	357.7
Chelan	170	233.8	247	337.4	256	347.8	287	386.3	245	328.8
Clallam	165	230.4	172	238.9	188	259.9	162	223.5	187	256.6
Clark	1,490	348.1	1,382	320.5	1,419	325.8	1,534	346.4	1,686	379.7
Columbia	2	*	7	170.7	6	+	8	+	6	+
Cowlitz	380	370.0	439	426.0	292	282.7	426	410.8	475	456.9
Douglas	114	295.0	128	329.0	135	343.7	146	367.8	144	360.5
Ferry	29	381.6	32	418.3	26	339.9	26	339.4	26	337.9
Franklin	298	370.2	319	386.7	413	487.0	416	480.4	370	414.7
Garfield	1	*	1	*	0	+	5	+	5	+
Grant	286	317.4	329	361.5	383	417.2	392	422.0	382	406.7
Grays Harbor	137	187.9	176	240.6	171	233.6	205	279.7	192	261.2
Island	216	274.1	206	259.6	205	257.2	232	290.0	307	382.7
Jefferson	40	133.1	50	165.7	78	257.6	77	250.8	56	182.2
King	6,406	329.8	6,763	345.6	6,828	344.5	7,332	363.5	8,421	415.4
Kitsap	824	324.5	1,075	422.4	895	352.4	920	359.5	938	365.4
Kittitas	142	343.8	189	455.4	163	389.0	168	399.1	179	422.0
Klickitat	45	219.5	29	140.8	33	159.4	55	263.8	57	272.0
Lewis	226	297.4	233	305.4	261	342.5	252	330.3	265	345.6
Lincoln	10	94.3	13	121.8	6	+	5	+	19	+
Mason	161	263.5	153	249.0	177	286.4	198	319.4	230	368.2
Okanogan	115	279.1	136	328.3	130	313.3	77	184.7	76	181.7
Pacific	17	81.3	30	143.1	28	133.3	34	161.1	57	270.1
Pend Oreille	16	123.1	22	167.9	20	152.1	23	174.1	24	180.6
Pierce	4,159	518.5	4,293	531.2	4,298	527.7	4,372	532.3	4,646	563.2
San Juan	20	125.8	15	94.2	11	+	20	124.2	20	123.8
Skagit	320	272.6	342	290.0	409	344.9	335	280.3	399	333.0
Skamania	25	224.2	30	266.1	29	256.6	25	219.9	14	122.1
Snohomish	1,760	245.5	1,871	258.8	1,880	257.4	2,006	270.7	2,203	295.7
Spokane	1,780	376.6	1,923	404.3	2,037	424.4	2,142	442.1	2194	450.5
Stevens	73	167.4	85	194.5	129	294.5	103	234.6	123	297.8
Thurston	958	377.0	906	352.8	919	353.3	890	337.1	988	371.4
Wahkiakum	5	125.0	4	*	1	+	2	+	4	+
Walla Walla	201	341.8	191	323.2	209	351.3	190	315.9	237	393.8
Whatcom	555	274.6	593	291.4	580	281.8	570	274.6	765	366.4
Whitman	156	348.2	173	376.5	189	410.9	302	649.5	355	754.2
Yakima	1,224	500.2	1,302	529.3	1,379	557.7	1,504	604.5	1,597	638.4
STATEWIDE TOTAL	23,237	343.3	24,600	360.8	25,013	363.4	26,246	376.7	28,721	410.0

All incidence rates are cases per 100,000 population.
*For 2011-2012, incidence rates not calculated for <5 cases.
+For 2013-2015, incidence rates suppressed for counts <20 and rates with residual standard error (RSE) >30% due to statistical instability.

CHLAMYDIA TRACHOMATIS STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1989	10,865	229.8	0
1990	12,709	261.1	0
1991	12,917	257.2	0
1992	11,762	228.8	0
1993	10,331	196.2	0
1994	10,575	197.1	0
1995	9,463	173.0	0
1996	9,237	165.9	0
1997	9,523	168.1	0
1998	10,998	191.3	0
1999	11,964	205.2	0
2000	13,066	221.7	0
2001	13,631	228.3	0
2002	14,936	246.5	0
2003	16,796	274.1	0
2004	17,635	284.0	0
2005	18,617	295.6	0
2006	17,819	277.5	0
2007	19,123	293.1	0
2008	21,327	322.7	0
2009	21,178	317.4	0
2010	21,401	318.3	0
2011	23,237	343.3	0
2012	24,600	360.8	0
2013	25,013	363.4	0
2014	26,246	376.7	0
2015	28,721	410.0	0

*All rates are cases per 100,000 population.

CHOLERA

Year	Cases	Rate*	Deaths
1985	0	0.0	0
1986	0	0.0	0
1987	0	0.0	0
1988	0	0.0	0
1989	0	0.0	0
1990	0	0.0	0
1991	0	0.0	0
1992	2	0.0	0
1993	0	0.0	0
1994	0	0.0	0
1995	0	0.0	0
1996	0	0.0	0
1997	0	0.0	0
1998	0	0.0	0
1999	0	0.0	0
2000	0	0.0	0
2001	0	0.0	0
2002	1	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	0	0.0	0
2006	0	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	0	0.0	0
2011	0	0.0	0
2012	0	0.0	0
2013	1	0.0	0
2014	0	0.0	0
2015	0	0.0	0

*All rates are cases per 100,000 population.

CRYPTOSPORIDIOSIS[+]

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Asotin	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Benton	0	0.0	1	*	2	*	2	*	1	*
Chelan	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Clallam	8	11.2	4	*	1	*	3	*	2	*
Clark	9	2.1	14	3.2	8	1.8	5	1.1	9	2.0
Columbia	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Cowlitz	3	*	2	*	4	*	3	*	3	*
Douglas	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Ferry	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Franklin	1	*	0	0.0	0	0.0	1	*	1	*
Garfield	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Grant	0	0.0	0	0.0	1	*	0	*	1	*
Grays Harbor	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Island	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Jefferson	7	23.3	7	23.2	3	*	1	*	3	*
King	13	0.7	23	1.2	18	0.9	19	0.9	25	1.2
Kitsap	0	0.0	2	*	0	0.0	1	*	3	*
Kittitas	0	0.0	0	0.0	1	*	0	*	0	0.0
Klickitat	0	0.0	1	*	0	0.0	0	*	1	*
Lewis	0	0.0	0	0.0	1	*	0	*	9	11.7
Lincoln	1	*	0	0.0	1	*	0	*	0	0.0
Mason	1	*	1	*	0	0.0	1	*	0	0.0
Okanogan	0	0.0	0	0.0	0	0.0	0	*	1	*
Pacific	0	0.0	1	*	0	0.0	0	*	0	0.0
Pend Oreille	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Pierce	39	4.9	22	2.7	24	3.0	18	2.2	24	2.9
San Juan	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Skagit	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Skamania	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Snohomish	1	*	10	1.4	7	1.0	3	*	5	0.7
Spokane	1	*	3	*	4	*	2	*	5	1.0
Stevens	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Thurston	2	*	3	*	2	*	7	2.7	3	*
Wahkiakum	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Walla Walla	1	*	1	*	2	*	1	*	0	0.0
Whatcom	0	0.0	0	0.0	0	0.0	0	*	10	4.8
Whitman	0	0.0	1	*	1	*	0	*	0	0.0
Yakima	1	*	5	2.0	3	*	7	2.8	7	2.8
STATEWIDE TOTAL	88	1.3	101	1.5	84	1.2	75	1.1	113	1.6

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

CRYPTOSPORIDIOSIS STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
2001	73	1.2	0
2002	62	1.0	0
2003	65	1.1	0
2004	63	1.0	0
2005	94	1.5	0
2006	95	1.5	0
2007	139	2.1	0
2008	99	1.5	0
2009	102	1.5	0
2010	102	1.5	0
2011	88	1.3	0
2012	101	1.5	0
2013	84	1.2	0
2014	75	1.1	0
2015	113	1.6	0

*All rates are cases per 100,000 population.

CYCLOSPORIASIS‡

Year	Cases	Rate*	Deaths
2002	5	0.1	0
2003	0	0.0	0
2004	11	0.2	0
2005	5	0.1	0
2006	1	0.0	0
2007	1	0.0	0
2008	1	0.0	0
2009	0	0.0	0
2010	2	0.0	0
2011	4	0.1	0
2012	0	0.0	0
2013	0	0.0	0
2014	2	0.0	0
2015	5	0.1	0

‡Cyclosporiasis first became a notifiable condition in Washington in 12/2000.
*All rates are cases per 100,000 population.

DIPHTHERIA

Year	Cases	Rate*	Deaths
1985	0	0.0	0
1986	0	0.0	0
1987	0	0.0	0
1988	0	0.0	0
1989	0	0.0	0
1990	0	0.0	0
1991	0	0.0	0
1992	0	0.0	0
1993	0	0.0	0
1994	0	0.0	0
1995	0	0.0	0
1996	0	0.0	0
1997	0	0.0	0
1998	0	0.0	0
1999	0	0.0	0
2000	0	0.0	0
2001	0	0.0	0
2002	0	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	0	0.0	0
2006	0	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	0	0.0	0
2011	0	0.0	0
2012	0	0.0	0
2013	0	0.0	0
2014	0	0.0	0
2015	0	0.0	0

*All rates are cases per 100,000 population.

GIARDIASIS

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	1	*	1	*	0	0.0	0	*	3	15.5
Asotin	0	0.0	1	*	3	*	4	*	1	4*
Benton	3	*	3	*	8	4.4	6	3.3	2	*
Chelan	7	9.6	1	*	7	9.5	4	*	9	12.0
Clallam	4	*	7	9.7	6	8.3	5	6.9	7	9.6
Clark	47	11.0	30	7.0	25	5.7	32	7.2	28	6.2
Columbia	1	*	0	0.0	1	*	1	*	1	*
Cowlitz	2	*	5	4.9	6	5.8	3	*	3	*
Douglas	0	0.0	1	*	3	*	0	*	2	*
Ferry	0	0.0	0	0.0	1	*	0	*	1	*
Franklin	0	0.0	4	*	3	*	6	6.9	4	*
Garfield	0	0.0	0	0.0	0	0.0	0	*	0	0.0
Grant	1	*	3	*	3	*	4	*	4	*
Grays Harbor	9	12.3	4	*	1	*	3	*	5	6.8
Island	7	8.9	6	7.6	13	16.3	4	*	1	*
Jefferson	6	20.0	9	29.8	6	19.8	7	22.8	3	*
King	156	8.0	170	8.7	195	9.8	188	9.3	219	10.7
Kitsap	18	7.1	23	9.0	23	9.0	16	6.3	26	10.1
Kittitas	4	*	4	*	1	*	5	11.9	5	11.7
Klickitat	0	0.0	1	*	2	*	3	*	5	23.8
Lewis	6	7.9	7	9.2	7	9.2	5	6.6	3	*
Lincoln	1	*	0	0.0	0	0.0	0	*	0	0.0
Mason	8	13.1	7	11.4	4	*	4	*	4	*
Okanogan	4	*	2	*	7	16.9	5	12.0	6	14.3
Pacific	0	0.0	3	*	2	*	3	*	0	0.0
Pend Oreille	0	0.0	1	*	0	0.0	1	*	1	*
Pierce	42	5.2	48	5.9	46	5.7	41	5.0	42	5.1
San Juan	1	*	2	*	1	*	0	*	3	*
Skagit	9	7.7	3	*	6	5.1	7	5.9	9	7.5
Skamania	2	*	4	*	0	0.0	0	*	0	0.0
Snohomish	67	9.3	52	7.2	60	8.2	43	5.8	71	9.4
Spokane	31	6.6	39	8.2	24	5.0	47	9.7	60	12.3
Stevens	2	*	3	*	0	0.0	6	13.7	1	*
Thurston	37	14.6	33	12.9	27	10.4	19	7.2	17	6.4
Wahkiakum	0	0.0	0	0.0	0	0.0	0	*	1	*
Walla Walla	5	8.5	4	*	7	11.8	5	8.3	2	*
Whatcom	29	14.3	19	9.3	35	17.0	18	8.7	25	11.9
Whitman	2	*	2	*	3	*	2	*	4	*
Yakima	17	6.9	10	4.1	12	4.9	18	7.2	26	10.4
STATEWIDE TOTAL	529	7.8	512	7.5	548	8.0	515	7.4	604	8.6

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

GIARDIASIS STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	840	20.3	0
1981	547	12.9	0
1982	956	22.4	0
1983	706	16.4	0
1984	710	16.3	0
1985	779	17.6	0
1986	811	18.2	0
1987	827	18.3	0
1988	851	18.4	0
1989	980	20.7	0
1990	792	16.3	0
1991	876	17.4	1
1992	860	16.7	1
1993	747	14.2	0
1994	722	13.5	0
1995	855	15.6	0
1996	668	12.0	0
1997	738	13.0	0
1998	740	12.9	1
1999	560	9.6	1
2000	622	10.6	1
2001	512	8.6	0
2002	510	8.4	0
2003	435	7.1	0
2004	444	7.2	0
2005	437	6.9	0
2006	451	7.0	0
2007	590	9.0	0
2008	486	7.4	0
2009	467	7.0	0
2010	521	7.7	0
2011	529	7.8	0
2012	512	7.5	0
2013	548	8.0	0
2014	515	7.4	0
2015	604	8.6	0

*All rates are cases per 100,000 population.

GONORRHEA

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	1	*	8	42.0	3	+	9	+	32	163.3
Asotin	6	27.7	0	0.0	2	+	3	+	16	+
Benton	30	16.9	49	27.2	88	48.0	152	81.5	135	71.3
Chelan	8	11.0	10	13.7	10	+	13	17.5	27	36.2
Clallam	15	20.9	2	*	8	+	13	17.9	10	13.7
Clark	159	37.1	151	35.0	148	34.0	208	47.0	247	55.6
Columbia	0	0.0	2	*	0	+	1	+	2	+
Cowlitz	19	18.5	26	25.2	21	20.3	33	31.8	100	96.2
Douglas	7	18.1	3	*	9	+	8	+	11	+
Ferry	1	*	2	*	2	+	1	+	2	+
Franklin	18	22.4	24	29.1	73	86.1	98	113.2	67	75.1
Garfield	0	0.0	1	*	0	+	1	+	0	+
Grant	21	23.3	59	64.8	34	37.0	80	86.1	116	123.5
Grays Harbor	12	16.5	5	6.8	12	16.4	34	46.4	31	42.2
Island	6	7.6	19	23.9	24	30.1	25	31.3	27	33.7
Jefferson	3	*	1	*	3	+	21	68.4	9	+
King	1,376	70.8	1,527	78.0	1771	89.4	2,219	110.0	2,922	144.1
Kitsap	54	21.3	57	22.4	109	42.9	183	71.5	197	76.7
Kittitas	9	21.8	8	19.3	5	+	16	38.0	23	54.2
Klickitat	1	*	3	*	1	+	3	+	6	+
Lewis	6	7.9	12	15.7	21	27.6	16	21.0	31	40.4
Lincoln	0	0.0	1	*	0	+	0	+	3	+
Mason	6	9.8	15	24.4	14	22.7	38	61.3	40	64.0
Okanogan	8	19.4	5	12.1	12	28.9	10	+	10	+
Pacific	2	*	3	*	15	71.4	11	+	6	+
Pend Oreille	0	0.0	4	*	6	+	1	+	3	+
Pierce	424	52.9	657	81.3	966	118.6	1,271	154.8	1,363	165.2
San Juan	1	*	4	*	1	+	3	+	1	+
Skagit	16	13.6	22	18.7	41	34.6	55	46.0	53	44.2
Skamania	4	*	1	*	1	+	1	+	1	+
Snohomish	169	23.6	165	22.8	251	34.4	402	54.3	504	67.6
Spokane	158	33.4	181	38.1	329	68.5	530	109.4	527	108.2
Stevens	2	*	1	*	16	36.5	9	+	17	+
Thurston	57	22.4	88	34.3	114	43.8	146	55.3	192	72
Wahkiakum	0	0.0	0	0.0	0	+	1	+	0	+
Walla Walla	3	*	9	15.2	27	45.4	46	76.5	25	41.5
Whatcom	18	8.9	49	24.1	60	29.2	58	27.9	61	29.2
Whitman	11	24.6	26	56.6	13	28.3	11	+	10	21.2
Yakima	99	40.5	82	33.3	180	72.8	406	163.2	376	150.3
STATEWIDE TOTAL	2,730	40.3	3,282	48.1	4,390	63.8	6,136	88.1	7,203	102.8

All incidence rates are cases per 100,000 population.
*For 2011-2012, incidence rates not calculated for <5 cases.
+For 2013-2015, incidence rates suppressed for counts <20 and rates with residual standard error (RSE) >30% due to statistical instability.

GONORRHEA
STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1982	11,381	266.1	0
1983	9,895	229.7	0
1984	9,158	210.3	0
1985	10,073	228.1	0
1986	9,848	220.7	0
1987	8,909	196.8	0
1988	7,154	155.0	0
1989	6,369	134.7	0
1990	5,009	102.9	0
1991	4,441	88.4	0
1992	4,169	81.1	0
1993	3,740	71.0	0
1994	2,893	53.9	0
1995	2,765	50.5	0
1996	2,020	36.3	0
1997	1,955	34.5	0
1998	1,948	33.9	0
1999	2,132	36.6	0
2000	2,419	41.0	0
2001	2,991	50.1	0
2002	2,925	48.3	0
2003	2,754	44.9	0
2004	2,810	45.3	0
2005	3,738	59.3	0
2006	4,231	65.9	0
2007	3,646	55.9	0
2008	3,116	47.2	0
2009	2,268	34.0	0
2010	2,865	42.6	0
2011	2,730	40.3	0
2012	3,282	48.1	0
2013	4,390	63.8	0
2014	6,136	88.1	0
2015	7,203	102.8	0

*All rates are cases per 100,000 population.

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE

Year	Cases	Rate*	Deaths
1981	156	3.7	0
1982	149	3.5	6
1983	123	2.9	5
1984	110	2.5	5
1985	153	3.5	6
1986	319	7.1	11
1987	271	6.0	6
1988	200	4.3	0
1989	163	3.4	2
1990	123	2.5	6
1991	51	1.0	0
1992	22	0.4	1
1993	17	0.3	0
1994	10	0.2	0
1995	11	0.2	3
1996	10	0.2	0
1997	6	0.1	0
1998	11	0.2	1
1999	5	0.1	1
2000	8	0.1	0
2001*	7	1.8	0
2002*	5	1.2	0
2003*	13	3.2	1
2004*	4	1.0	0
2005*	5	1.2	0
2006*	5	1.2	0
2007*	6	1.4	0
2008*	2	0.5	0
2009*	9	2.1	0
2010*	10	2.3	1
2011*	8	1.8	1
2012*	4	0.9	0
2013*	11	2.4	0
2014*	9	2.0	0
2015*	5	1.1	0

*All rates are cases per 100,000 population. Rates for 2001-2015 are for population aged 0-4 years, while rates for prior years are for the entire population.

HANTAVIRUS PULMONARY SYNDROME‡

Year	Cases	Rate*	Deaths
1985**	1	0.0	1
1994	2	0.0	1
1995	4	0.1	2
1996	4	0.1	2
1997	3	0.1	1
1998	2	0.0	0
1999	5	0.1	1
2000	1	0.0	0
2001	1	0.0	0
2002	1	0.0	0
2003	2	0.0	1
2004	2	0.0	0
2005	1	0.0	0
2006	3	0.0	2
2007	2	0.0	0
2008	2	0.0	1
2009	3	0.0	1
2010	2	0.0	0
2011	2	0.0	1
2012	2	0.0	2
2013	0	0.0	0
2014	1	0.0	0
2015	1	0.0	0

‡ Hantavirus Pulmonary Syndrome first became a notifiable condition in Washington in 12/2000.
*All rates are cases per 100,000 population.
** One retrospective case from 1985 was reported.

HEPATITIS A, ACUTE

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Asotin	1	*	0	0.0	1	*	0	0.0	0	0.0
Benton	0	0.0	1	*	0	0.0	1	*	1	*
Chelan	1	*	1	*	4	*	0	0.0	1	*
Clallam	0	0.0	0	0.0	1	*	0	0.0	0	0.0
Clark	0	0.0	1	*	2	*	3	*	3	*
Columbia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cowlitz	0	0.0	2	*	1	*	0	0.0	1	*
Douglas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ferry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Garfield	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grant	1	*	1	*	2	*	0	0.0	1	*
Grays Harbor	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Island	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Jefferson	0	0.0	1	*	0	0.0	0	0.0	0	0.0
King	16	0.8	10	0.5	13	0.7	6	0.3	8	0.4
Kitsap	2	*	0	0.0	2	*	0	0.0	0	0.0
Kittitas	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Klickitat	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Lewis	0	0.0	1	*	1	*	0	0.0	0	0.0
Lincoln	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mason	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Okanogan	1	*	0	0.0	0	0.0	0	0.0	0	0.0
Pacific	0	0.0	0	0.0	1	*	0	0.0	0	0.0
Pend Oreille	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pierce	2	*	1	*	1	*	4	*	0	0.0
San Juan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Skagit	2	*	1	*	0	0.0	1	*	1	*
Skamania	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Snohomish	2	*	1	*	9	1.2	6	0.8	5	0.7
Spokane	0	0.0	0	0.0	1	*	3	*	1	*
Stevens	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Thurston	0	0.0	2	*	1	*	0	0.0	1	*
Wahkiakum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Walla Walla	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Whatcom	3	*	1	*	1	*	1	*	3	*
Whitman	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Yakima	0	0.0	2	*	4	*	0	0.0	0	0.0
STATEWIDE TOTAL	31	0.5	29	0.4	45	0.7	26	0.4	26	0.4

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

HEPATITIS A, ACUTE STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	554	13.4	2
1981	791	18.7	0
1982	494	11.6	1
1983	268	6.2	1
1984	373	8.6	0
1985	702	15.9	2
1986	1,385	31.0	1
1987	2,589	57.2	1
1988	2,669	57.8	7
1989	3,273	69.2	5
1990	1,380	28.4	1
1991	608	12.1	3
1992	865	16.8	1
1993	926	17.6	1
1994	1,119	20.9	2
1995	937	17.1	9
1996	1,001	18.0	3
1997	1,019	18.0	1
1998	1,037	18.0	2
1999	505	8.7	1
2000	298	5.1	1
2001	184	3.1	0
2002	162	2.7	0
2003	50	0.8	0
2004	69	1.1	0
2005	63	1.0	1
2006	52	0.8	2
2007	60	0.9	0
2008	51	0.8	0
2009	42	0.6	1
2010	21	0.3	0
2011	31	0.5	1
2012	29	0.4	1
2013	45	0.7	1
2014	26	0.4	0
2015	26	0.4	0

*All rates are cases per 100,000 population.

HEPATITIS B, ACUTE

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Asotin	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Benton	0	0.0	1	*	1	*	0	0.0	0	0.0
Chelan	0	0.0	0	0.0	0	0.0	1	*	1	*
Clallam	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Clark	3	*	0	0.0	0	0.0	0	0.0	3	*
Columbia	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Cowlitz	4	*	1	*	2	*	1	*	2	*
Douglas	0	0.0	1	*	1	*	0	0.0	0	0.0
Ferry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Garfield	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grant	1	*	1	*	0	0.0	1	*	2	*
Grays Harbor	1	*	1	*	1	*	5	6.8	1	*
Island	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Jefferson	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
King	15	0.8	11	0.6	10	0.5	10	0.5	7	0.3
Kitsap	2	*	1	*	0	0.0	0	0.0	1	*
Kittitas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Klickitat	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lewis	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Lincoln	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mason	0	0.0	0	0.0	0	0.0	0	0.0	1	*
Okanogan	1	*	0	0.0	0	0.0	0	0.0	0	0.0
Pacific	1	*	0	0.0	0	0.0	1	*	0	0.0
Pend Oreille	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pierce	1	*	1	*	3	*	0	0.0	5	0.6
San Juan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Skagit	0	0.0	0	0.0	1	*	1	*	0	0.0
Skamania	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Snohomish	3	*	5	0.7	0	0.0	8	1.1	2	*
Spokane	1	*	4	*	13	2.7	13	2.7	8	1.6
Stevens	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Thurston	2	*	1	*	1	*	0	0.0	0	0.0
Wahkiakum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Walla Walla	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Whatcom	0	0.0	3	*	1	*	1	*	1	*
Whitman	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Yakima	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
STATEWIDE TOTAL	35	0.5	34	0.5	34	0.5	44	0.6	34	0.5

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

HEPATITIS B, ACUTE STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	257	6.2	6
1981	345	8.2	11
1982	358	8.4	2
1983	307	7.1	3
1984	317	7.3	2
1985	484	11.0	6
1986	989	22.2	8
1987	1,126	24.9	4
1988	979	21.2	6
1989	1,055	22.3	9
1990	616	12.7	7
1991	470	9.4	5
1992	399	7.8	1
1993	247	4.7	0
1994	255	4.8	2
1995	226	4.1	2
1996	158	2.8	1
1997	114	2.0	2
1998	136	2.4	0
1999	111	1.9	1
2000	132	2.2	5
2001	171	2.9	0
2002	83	1.4	0
2003	90	1.5	1
2004	64	1.0	1
2005	80	1.3	0
2006	80	1.2	2
2007	71	1.1	1
2008	56	0.8	0
2009	48	0.7	0
2010	50	0.7	1
2011	35	0.5	0
2012	34	0.5	1
2013	34	0.5	1
2014	44	0.6	0
2015	34	0.5	0

*All rates are cases per 100,000 population.

HEPATITIS B, CHRONIC

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Asotin	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Benton	0	0.0	0	0.0	0	0.0	5	2.7	2	*
Chelan	4	*	0	0.0	4	*	1	*	0	0.0
Clallam	0	0.0	1	*	1	*	1	*	0	0.0
Clark	61	14.3	60	13.9	60	13.8	86	19.4	74	16.4
Columbia	1	*	0	0.0	1	*	0	0.0	0	0.0
Cowlitz	10	9.7	14	13.6	10	9.7	8	7.7	10	9.6
Douglas	1	*	0	0.0	0	0.0	0	0.0	2	*
Ferry	0	0.0	0	0.0	0	0.0	0	0.0	1	*
Franklin	0	0.0	0	0.0	0	0.0	2	*	2	*
Garfield	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grant	4	*	1	*	0	0.0	3	*	5	5.3
Grays Harbor	0	0.0	3	*	0	0.0	2	*	3	*
Island	12	15.2	7	8.8	4	*	7	8.8	4	*
Jefferson	0	0.0	0	0.0	0	0.0	1	*	4	*
King	537	27.6	630	32.2	478	24.1	590	29.2	708	34.5
Kitsap	28	11.0	26	10.2	20	7.9	19	7.4	37	14.3
Kittitas	0	0.0	1	*	3	*	2	*	0	0.0
Klickitat	3	*	0	0.0	0	0.0	0	0.0	2	*
Lewis	3	*	3	*	2	*	1	*	5	6.5
Lincoln	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mason	0	0.0	3	*	3	*	1	*	1	*
Okanogan	0	0.0	1	*	0	0.0	1	*	1	*
Pacific	0	0.0	1	*	3	*	0	0.0	1	*
Pend Oreille	1	*	0	0.0	1	*	1	*	0	0.0
Pierce	90	11.2	113	14.0	†	-	92	11.2	118	14.2
San Juan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Skagit	6	5.1	3	*	7	5.9	1	*	6	5.0
Skamania	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Snohomish	138	19.2	157	21.7	157	21.5	170	22.9	159	21.0
Spokane	53	11.2	45	9.5	58	12.1	55	11.4	65	13.3
Stevens	2	*	3	*	3	*	1	*	2	*
Thurston	31	12.2	30	11.7	33	12.7	36	13.6	55	20.6
Wahkiakum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Walla Walla	4	*	3	*	1	*	0	0.0	0	0.0
Whatcom	12	5.9	17	8.4	9	4.4	12	5.8	17	8.1
Whitman	6	13.4	5	10.9	0	0.0	0	0.0	0	0.0
Yakima	4	*	1	*	3	*	8	3.2	10	4.0
Unspecified**	19	-	11	-	16	-	11	-	15	-
STATEWIDE TOTAL‡	1,030	15.2	1,140	16.7	877	12.7	1,118	16.0	1,309	18.5

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

**Includes cases diagnosed in correctional facilities and cases entered at the state level into the Public Health Issue Management System (PHIMS).

† Unable to appropriately classify cases submitted to Washington State Department of Health by Tacoma-Pierce County Health Department (TPCHD) using current methodologies.

‡ Statewide data represent cases classified as confirmed or probable based on laboratory data and established classification criteria.

HEPATITIS B, CHRONIC STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
2000	613	10.4	70
2001	1,078	18.1	55
2002	979	16.2	52
2003	950	15.5	48
2004	939	15.3	55
2005	1,034	16.4	49
2006	1,119	17.4	39
2007	1,138	17.4	47
2008	1,464	22.2	52
2009	1,194	17.9	64
2010	1,238	18.4	47
2011	1,030	15.2	54
2012	1,140	16.7	47
2013	877	12.7	60
2014	1,118	16.0	56
2015	1,309	18.5	48

*All rates are cases per 100,000 population.

HEPATITIS C, ACUTE

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Asotin	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Benton	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Chelan	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Clallam	3	*	2	*	2	*	3	*	2	*
Clark	1	*	2	*	2	*	3	*	0	0.0
Columbia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cowlitz	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Douglas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ferry	1	*	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Garfield	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grant	1	*	0	0.0	0	0.0	0	0.0	0	0.0
Grays Harbor	0	0.0	0	0.0	1	*	1	*	0	0.0
Island	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Jefferson	0	0.0	0	0.0	3	*	2	*	0	0.0
King	7	0.4	5	0.3	18	0.9	21	1.0	20	1.0
Kitsap	0	0.0	0	0.0	1	*	1	*	0	0.0
Kittitas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Klickitat	1	*	0	0.0	0	0.0	0	0.0	0	0.0
Lewis	0	0.0	0	0.0	1	*	0	0.0	0	0.0
Lincoln	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mason	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Okanogan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pacific	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pend Oreille	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pierce	1	*	3	*	7	0.9	16	1.9	22	2.7
San Juan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Skagit	4	*	4	*	1	*	3	*	2	*
Skamania	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Snohomish	3	*	1	*	3	*	2	*	1	*
Spokane	10	2.1	13	2.7	14	2.9	16	3.3	13	2.7
Stevens	1	*	2	*	1	*	0	0.0	0	0.0
Thurston	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Wahkiakum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Walla Walla	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Whatcom	8	4.0	19	9.3	9	4.4	11	5.3	2	*
Whitman	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Yakima	0	0.0	2	*	0	0.0	2	*	1	*
STATEWIDE TOTAL	41	0.6	54	0.8	63	0.9	83	1.2	63	0.9

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

HEPATITIS C, ACUTE STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1981	54	1.3	8
1982	94	2.2	0
1983	151	3.5	1
1984	131	3.0	2
1985	145	3.3	1
1986	167	3.7	7
1987	207	4.6	1
1988	232	5.0	2
1989	208	4.4	4
1990	141	2.9	6
1991	164	3.3	4
1992	186	3.6	1
1993	219	4.2	1
1994	294	5.5	0
1995	234	4.3	1
1996	66	1.2	1
1997	42	0.7	0
1998	29	0.5	0
1999	24	0.4	0
2000	44	0.7	0
2001	31	0.5	0
2002	27	0.4	0
2003	21	0.3	0
2004	23	0.4	1
2005	21	0.3	0
2006	23	0.4	0
2007	18	0.3	0
2008	25	0.4	0
2009	22	0.3	0
2010	25	0.4	0
2011	41	0.6	0
2012	54	0.8	0
2013	63	0.9	0
2014	83	1.2	0
2015	63	0.9	0

*All rates are cases per 100,000 population.

HEPATITIS C, CHRONIC

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	1	*	7	36.7	0	0.0	7	36.1	4	*
Asotin	20	92.4	19	87.6	19	87.2	17	77.4	2	*
Benton	5	2.8	11	6.1	36	19.6	51	27.3	27	14.3
Chelan	32	44.0	18	24.6	14	19.0	31	41.7	15	20.0
Clallam	41	57.3	33	45.8	31	42.8	77	106.2	65	89.5
Clark	444	103.7	468	108.5	407	93.5	607	137.1	620	137.2
Columbia	4	*	6	146.3	2	*	6	147.1	1	*
Cowlitz	137	133.4	190	184.4	168	162.6	276	266.2	274	262.8
Douglas	12	31.0	9	23.1	6	15.3	6	15.1	4	*
Ferry	8	105.3	13	169.9	3	*	12	156.7	15	194.6
Franklin	0	0.0	9	10.9	6	7.1	12	13.9	3	*
Garfield	0	0.0	1	*	0	0.0	4	*	1	*
Grant	52	57.7	46	50.5	23	25.1	15	16.1	22	23.4
Grays Harbor	99	135.8	88	120.3	77	105.2	148	201.9	135	184.7
Island	41	52.0	38	47.9	42	52.7	59	73.8	53	65.8
Jefferson	26	89.9	10	33.1	11	36.3	24	78.2	31	100.4
King	1311	67.5	1147	58.6	899	45.4	1095	54.3	1122	54.7
Kitsap	194	76.4	201	79.0	183	72.0	234	91.4	301	116.6
Kittitas	14	33.9	11	26.5	14	33.4	38	90.3	17	39.8
Klickitat	16	78.0	20	97.1	12	58.0	11	52.8	19	90.5
Lewis	40	52.6	64	83.9	75	98.4	107	140.2	97	126.5
Lincoln	3	*	1	*	5	46.8	7	65.4	0	0.0
Mason	59	96.6	62	100.9	59	95.5	91	146.8	113	181.7
Okanogan	7	17.0	18	43.5	13	31.3	8	19.2	14	33.4
Pacific	24	114.8	22	104.9	22	104.8	44	208.5	26	122.6
Pend Oreille	11	84.6	10	76.3	3	*	22	166.5	20	151.1
Pierce	430	53.6	396	49.0	288	35.4	386	47.0	910	109.6
San Juan	4	*	7	44.0	9	56.3	14	87.0	15	92.7
Skagit	89	75.8	103	87.3	105	88.5	160	133.9	137	113.6
Skamania	8	71.7	4	*	1	*	0	0.0	1	*
Snohomish	487	67.9	516	71.4	497	68.0	654	88.3	715	94.4
Spokane	509	107.7	562	118.2	594	123.8	668	137.9	686	140.5
Stevens	38	87.2	49	112.1	28	63.9	57	129.8	46	104.5
Thurston	196	77.1	176	68.5	189	72.7	279	105.7	261	97.6
Wahkiakum	4	*	5	124.2	1	*	0	0.0	0	0.0
Walla Walla	35	59.5	37	62.6	25	42.0	34	56.5	40	66.0
Whatcom	247	122.2	245	120.4	295	143.3	301	145.0	282	134.4
Whitman	19	42.4	14	30.5	3	*	5	10.8	1	*
Yakima	76	31.1	0	0.0	13	5.3	251	100.9	155	62.0
Unspecified**	323	-	204	-	229	-	161	-	668	-
STATEWIDE TOTAL‡	5,066	74.9	4,840	71.0	4,407	64.0	5,979	85.8	6,918	98.0

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

**Includes cases diagnosed in correctional facilities and cases entered at the state level into the Public Health Issue Management System (PHIMS).

‡ Statewide data represent cases classified as confirmed or probable based on laboratory data and established classification criteria.

HEPATITIS C, CHRONIC STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
2000	3,363	57.1	262
2001	6,052	101.4	296
2002	5,218	86.1	335
2003	4,142	67.6	299
2004	4,681	76.4	362
2005	4,708	74.7	322
2006	5,296	82.5	355
2007	5,481	84.0	444
2008	6,450	97.6	473
2009	5,511	82.6	550
2010	5,619	83.6	560
2011	5,066	74.9	580
2012	4,840	71.0	604
2013	4,407	64.0	584
2014	5,979	85.8	645
2015	6,918	98.0	651

*All rates are cases per 100,000 population.

HERPES SIMPLEX

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	3	*	3	*	3	+	1	+	2	+
Asotin	7	32.3	4	*	6	+	3	+	3	+
Benton	50	28.1	44	24.4	50	27.3	62	33.2	66	34.9
Chelan	20	27.5	21	28.7	9	+	6	+	4	+
Clallam	10	14.0	12	16.7	20	27.6	18	24.8	22	30.2
Clark	67	15.7	90	20.9	153	35.1	193	43.6	183	41.2
Columbia	0	0.0	1	*	2	+	0	+	0	+
Cowlitz	32	31.2	53	51.4	31	30.0	57	55.0	52	50.0
Douglas	11	28.5	6	15.4	7	+	4	+	1	2.5
Ferry	1	*	0	0.0	4	+	4	+	3	39.0
Franklin	14	17.4	13	15.8	18	21.2	27	31.2	36	40.4
Garfield	0	0.0	0	0.0	1	+	0	+	0	+
Grant	12	13.3	16	17.6	9	+	14	15.1	18	+
Grays Harbor	19	26.1	11	15.0	23	31.4	26	35.5	19	+
Island	35	44.4	31	39.1	34	42.7	28	35.0	22	27.4
Jefferson	9	30.0	5	16.6	2	+	6	+	5	+
King	632	32.5	742	37.9	633	31.9	385	19.1	770	38.0
Kitsap	71	28.0	67	26.3	71	28.0	78	30.5	91	35.5
Kittitas	14	33.9	17	41.0	8	+	17	40.4	25	58.9
Klickitat	1	*	3	*	2	+	2	+	2	+
Lewis	22	28.9	31	40.6	27	35.4	11	+	8	+
Lincoln	0	0.0	0	0.0	1	+	1	+	2	+
Mason	16	26.2	19	30.9	6	+	7	+	10	+
Okanogan	15	36.4	9	21.7	20	48.2	7	+	7	+
Pacific	1	*	1	*	5	+	9	+	3	+
Pend Oreille	6	46.2	1	*	2	+	1	+	3	+
Pierce	327	40.8	346	42.8	364	44.7	400	48.7	474	57.5
San Juan	2	*	3	*	0	*	1	+	1	+
Skagit	34	29.0	21	17.8	26	21.9	27	22.6	25	20.9
Skamania	0	0.0	1	*	1	+	0	+	0	+
Snohomish	297	41.4	228	31.5	282	38.6	274	37.0	217	29.1
Spokane	185	39.1	134	28.2	132	27.5	201	41.5	186	38
Stevens	3	*	8	18.3	11	+	1	+	6	+
Thurston	77	30.3	103	40.1	91	35.0	71	26.9	67	25.2
Wahkiakum	1	*	0	0.0	3	+	0	+	1	+
Walla Walla	17	28.9	17	28.8	14	23.5	18	29.9	21	34.9
Whatcom	62	30.7	66	32.4	71	34.5	54	26.0	53	25.4
Whitman	2	*	10	21.8	9	+	8	+	6	+
Yakima	74	30.2	60	24.4	56	22.7	60	24.1	110	44.0
STATEWIDE TOTAL	2,149	31.8	2,197	32.2	2,207	32.1	2,082	29.9	2,524	36.0

All incidence rates are cases per 100,000 population.
*For 2011-2012, incidence rates not calculated for <5 cases.
+For 2013-2015, incidence rates suppressed for counts <20 and rates with residual standard error (RSE) >30% due to statistical instability.

HERPES SIMPLEX STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
2003	2,073	33.8	0
2004	2,153	34.70	0
2005	2,331	37.0	0
2006	2,446	38.1	0
2007	1,952	29.9	0
2008	2,009	30.4	0
2009	1,875	28.1	0
2010	2,028	30.2	0
2011	2,149	31.8	0
2012	2,197	32.2	0
2013	2,207	32.1	0
2014	2,082	29.9	0
2015	2,524	36.0	0

*All rates are cases per 100,000 population.

Note: Data prior to 2009 are based on year reported rather than year diagnosed.

HUMAN IMMUNODEFICIENCY VIRUS (HIV)[§]

	2011		2012		2013		20124		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	1	*	0	*	0	*	0	*	1	*
Asotin	1	*	0	*	1	*	0	*	1	*
Benton	12	6.8	5	*	7	*	8	*	1	*
Chelan	4	*	3	*	3	*	4	*	5	*
Clallam	3	*	4	*	3	*	1	*	4	*
Clark	28	6.5	26	6.0	25	5.7	23	5.2	20	4.5
Columbia	0	*	0	*	0	*	0	*	0	*
Cowlitz	3	*	5	*	1	*	4	*	1	*
Douglas	1	*	0	*	2	*	0	*	3	*
Ferry	0	*	0	*	0	*	1	*	0	*
Franklin	1	*	2	*	0	*	1	*	5	*
Garfield	0	*	0	*	0	*	0	*	0	*
Grant	3	*	3	*	0	*	0	*	0	*
Grays Harbor	4	*	7	*	1	*	3	*	4	*
Island	1	*	3	*	3	*	2	*	0	*
Jefferson	0	*	1	*	1	*	2	*	1	*
King	270	13.9	286	14.6	252	12.7	272	13.5	237	11.7
Kitsap	6	*	11	*	7	*	6	*	9	*
Kittitas	0	*	0	*	2	*	1	*	1	*
Klickitat	0	*	1	*	0	*	0	*	0	*
Lewis	5	*	1	*	1	*	1	*	1	*
Lincoln	0	*	0	*	0	*	0	*	0	*
Mason	7	*	9	*	3	*	1	*	5	*
Okanogan	1	*	3	*	0	*	0	*	0	*
Pacific	0	*	2	*	0	*	1	*	0	*
Pend Oreille	0	*	0	*	0	*	0	*	1	*
Pierce	57	7.1	52	6.4	60	7.4	44	5.4	63	7.6
San Juan	0	*	0	*	2	*	0	*	0	*
Skagit	5	*	4	*	9	*	5	*	0	*
Skamania	0	*	0	*	0	*	1	*	1	*
Snohomish	33	4.6	39	5.4	28	3.8	35	4.7	35	4.7
Spokane	25	5.3	25	5.3	21	4.4	6	*	23	4.7
Stevens	1	*	0	*	3	*	0	*	0	*
Thurston	7	*	4	*	8	*	5	*	8	*
Wahkiakum	0	*	0	*	0	*	1	*	0	*
Walla Walla	0	*	3	*	0	*	0	*	0	*
Whatcom	7	*	4	*	8	*	5	*	8	*
Whitman	1	*	0	*	0	*	1	*	2	*
Yakima	8	*	7	*	6	*	9	*	6	*
STATEWIDE TOTAL	495	7.3	510	7.5	457	6.6	443	6.4	446	6.4

§ Cases are presented by year of initial HIV diagnosis, regardless of diagnostic status (HIV or AIDS), and by county of residence at time of diagnosis. Data from years 2011-2014 have been adjusted since previous editions of this report. Data reflects cases reported through 6/30/16.

*All rates expressed as cases per 100,000 population. New HIV case rates not calculated for 11 or fewer cases.

People Living with HIV Disease and Related Deaths

STATEWIDE BY YEAR

Year	Cases[α]	Rate*	Deaths**
2002	8,513	140.5	143
2003	8,926	145.7	180
2004	9,382	151.1	142
2005	9,789	155.4	164
2006	10,242	159.5	122
2007	10,674	163.6	114
2008	11,021	166.8	110
2009	11,365	170.3	134
2010	11,726	174.4	108
2011	11,730	173.3	118
2012	11,877	174.2	100
2013	12,228	177.7	107
2014	12,532	179.9	78
2015	13,021	185.9	---

[α] Includes resident cases of HIV disease that have been reported to the health department and are presumed living in Washington at a specific point in time, regardless of where each case was diagnosed. This methodology accounts for in-migration as well as out-migration, which results in a slower increase of people living with HIV in Washington over time.

*All rates are cases per 100,000 population.

**Includes only deaths attributed to HIV or AIDS. The number of HIV deaths in 2015 was unavailable at the time of this report.

LEGIONELLOSIS

Year	Cases	Rate*	Deaths
1985	7	0.2	2
1986	15	0.3	8
1987	24	0.5	3
1988	29	0.6	4
1989	30	0.6	5
1990	18	0.4	4
1991	15	0.3	5
1992	15	0.3	5
1993	12	0.2	2
1994	13	0.2	2
1995	22	0.4	6
1996	7	0.1	2
1997	11	0.2	0
1998	15	0.3	2
1999	21	0.4	4
2000	19	0.3	1
2001	10	0.2	1
2002	8	0.1	3
2003	14	0.2	1
2004	15	0.2	4
2005	18	0.3	1
2006	20	0.3	1
2007	24	0.4	2
2008	19	0.3	1
2009	29	0.4	2
2010	35	0.5	4
2011	43	0.6	4
2012	30	0.4	5
2013	52	0.8	5
2014	63	0.9	8
2015	58	0.8	2

*All rates are cases per 100,000 population.

LEPTOSPIROSIS

Year	Cases	Rate*	Deaths
1986	0	0.0	0
1987	0	0.0	0
1988	0	0.0	0
1989	0	0.0	0
1990	0	0.0	0
1991	0	0.0	0
1992	0	0.0	0
1993	0	0.0	0
1994	0	0.0	0
1995	0	0.0	0
1996	2	0.0	0
1997	2	0.0	0
1998	0	0.0	0
1999	0	0.0	0
2000	0	0.0	0
2001	4	0.1	0
2002	0	0.0	0
2003	1	0.0	0
2004	0	0.0	0
2005	4	0.1	0
2006	1	0.0	0
2007	5	0.1	0
2008	1	0.0	0
2009	0	0.0	0
2010	1	0.0	0
2011	0	0.0	0
2012	2	0.0	0
2013	0	0.0	0
2014	0	0.0	0
2015	2	0.0	0

*All rates are cases per 100,000 population.

LISTERIOSIS

Year	Cases	Rate*	Deaths
1985	21	0.5	1
1986	37	0.8	5
1987	36	0.8	6
1988	38	0.8	4
1989	21	0.4	2
1990	22	0.5	3
1991	18	0.4	6
1992	13	0.3	0
1993	21	0.4	2
1994	13	0.2	3
1995	24	0.4	1
1996	11	0.2	3
1997	17	0.3	1
1998	12	0.2	3
1999	19	0.3	5
2000	12	0.2	2
2001	15	0.3	1
2002	11	0.2	0
2003	13	0.2	3
2004	13	0.2	3
2005	14	0.2	3
2006	18	0.3	3
2007	25	0.4	2
2008	29	0.4	3
2009	24	0.4	4
2010	24	0.4	1
2011	19	0.3	2
2012	26	0.4	5
2013	21	0.3	1
2014	24	0.3	5
2015	21	0.3	3

*All rates are cases per 100,000 population.

LYME DISEASE

Year	Cases	Rate*	Deaths
1986	1	0.0	0
1987	10	0.2	0
1988	12	0.3	0
1989	37	0.8	0
1990	33	0.7	0
1991	7	0.1	0
1992	14	0.3	0
1993	9	0.2	0
1994	4	0.1	0
1995	10	0.2	0
1996	18	0.3	0
1997	10	0.2	0
1998	7	0.1	0
1999	14	0.2	0
2000	9	0.2	0
2001	9	0.2	0
2002	12	0.2	0
2003	7	0.1	0
2004	14	0.2	0
2005	13	0.2	0
2006	8	0.1	0
2007	12	0.2	0
2008	23	0.3	0
2009	16	0.2	0
2010	16	0.2	0
2011	19	0.3	0
2012	15	0.2	0
2013	21	0.3	0
2014	15	0.2	0
2015	24	0.3	0

*All rates are cases per 100,000 population.

MALARIA

Year	Cases	Rate*	Deaths
1981	30	0.7	0
1982	24	0.6	0
1983	15	0.3	0
1984	20	0.5	0
1985	34	0.8	0
1986	35	0.8	0
1987	28	0.6	0
1988	24	0.5	0
1989	44	0.9	0
1990	33	0.7	0
1991	29	0.6	0
1992	21	0.4	0
1993	41	0.8	0
1994	45	0.8	0
1995	23	0.4	0
1996	41	0.7	0
1997	49	0.9	0
1998	30	0.5	0
1999	43	0.7	0
2000	43	0.7	0
2001	19	0.3	0
2002	26	0.4	0
2003	34	0.6	0
2004	24	0.4	0
2005	24	0.4	0
2006	43	0.7	1
2007	30	0.5	0
2008	32	0.5	0
2009	26	0.4	1
2010	39	0.6	0
2011	24	0.4	0
2012	26	0.4	0
2013	30	0.4	0
2014	41	0.6	0
2015	23	0.3	0

*All rates are cases per 100,000 population.

MEASLES

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Asotin	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Benton	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chelan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Clallam	0	0.0	0	0.0	0	0.0	0	0.0	6	8.3
Clark	3	*	0	0.0	0	0.0	0	0.0	0	0.0
Columbia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cowlitz	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Douglas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Ferry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Garfield	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grays Harbor	0	0.0	0	0.0	0	0.0	1	1.4	1	*
Island	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Jefferson	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
King	0	0.0	0	0.0	4	*	13	0.6	0	0.0
Kitsap	1	*	0	0.0	0	0.0	1	0.4	0	0.0
Kittitas	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Klickitat	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lewis	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Lincoln	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mason	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Okanogan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pacific	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pend Oreille	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pierce	0	0.0	0	0.0	0	0.0	3	0.4	0	0.0
San Juan	0	0.0	0	0.0	0	0.0	7	43.5	0	0.0
Skagit	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Skamania	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Snohomish	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Spokane	0	0.0	0	0.0	0	0.0	0	0.0	2	*
Stevens	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Thurston	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Wahkiakum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Walla Walla	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Whatcom	0	0.0	0	0.0	0	0.0	6	2.9	1	*
Whitman	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Yakima	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
STATEWIDE TOTAL	4	0.1	0	0.0	4	0.1	33	0.5	10	0.1

All rates are cases per 100,000 population.
*Incidence rates not calculated for <5 cases.

MEASLES STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	178	4.3	0
1981	3	0.1	0
1982	42	1.0	0
1983	43	1.0	0
1984	178	4.1	0
1985	178	4.0	0
1986	176	3.9	0
1987	47	1.0	0
1988	7	0.2	0
1989	56	1.2	0
1990	357	7.3	2
1991	67	1.3	0
1992	11	0.2	0
1993	0	0.0	0
1994	5	0.1	0
1995	17	0.3	0
1996	38	0.7	0
1997	2	0.0	0
1998	1	0.0	0
1999	5	0.1	0
2000	3	0.1	0
2001	15	0.3	0
2002	1	0.0	0
2003	0	0.0	0
2004	7	0.1	0
2005	1	0.0	0
2006	1	0.0	0
2007	3	0.0	0
2008	19	0.3	0
2009	1	0.0	0
2010	1	0.0	0
2011	4	0.1	0
2012	0	0.0	0
2013	4	0.1	0
2014	33	0.5	0
2015	10	0.1	1

*All rates are cases per 100,000 population.

MENINGOCOCCAL DISEASE

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Asotin	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Benton	2	*	0	0.0	1	*	0	0.0	1	*
Chelan	0	0.0	0	0.0	1	*	0	0.0	1	*
Clallam	0	0.0	0	0.0	1	*	0	0.0	0	0.0
Clark	1	*	0	0.0	2	*	2	*	1	*
Columbia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cowlitz	0	0.0	1	*	1	*	1	*	0	0.0
Douglas	0	0.0	0	0.0	1	*	0	0.0	0	0.0
Ferry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	2	*	0	0.0	0	0.0	0	0.0	0	0.0
Garfield	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grant	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Grays Harbor	0	0.0	2	*	0	0.0	0	0.0	0	0.0
Island	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Jefferson	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
King	8	0.4	4	*	3	*	1	*	3	*
Kitsap	1	*	0	0.0	2	*	0	0.0	0	0.0
Kittitas	0	0.0	2	*	1	*	0	0.0	0	0.0
Klickitat	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Lewis	0	0.0	0	0.0	0	0.0	0	0.0	2	*
Lincoln	0	0.0	0	0.0	1	*	0	0.0	0	0.0
Mason	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Okanogan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pacific	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pend Oreille	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pierce	1	*	3	*	1	*	4	*	1	*
San Juan	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Skagit	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Skamania	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Snohomish	5	0.7	2	*	2	*	1	*	0	0.0
Spokane	0	0.0	2	*	2	*	2	*	0	0.0
Stevens	0	0.0	0	0.0	1	*	0	0.0	0	0.0
Thurston	0	0.0	1	*	0	0.0	2	*	1	*
Wahkiakum	0	0.0	0	0.0	0	0/0	0	0.0	0	0.0
Walla Walla	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Whatcom	2	*	1	*	0	0.0	0	0.0	0	0.0
Whitman	0	0.0	2	*	0	0.0	0	0.0	0	0.0
Yakima	0	0.0	2	*	0	0.0	1	*	0	0.0
STATEWIDE TOTAL	22	0.3	24	0.4	20	0.3	17	0.2	10	0.1

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

MENINGOCOCCAL DISEASE STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	67	1.6	2
1981	78	1.8	3
1982	56	1.3	2
1983	48	1.1	3
1984	56	1.3	3
1985	67	1.5	6
1986	62	1.4	5
1987	87	1.9	4
1988	76	1.6	3
1989	96	2.0	12
1990	80	1.6	5
1991	73	1.5	8
1992	92	1.8	5
1993	97	1.8	6
1994	111	2.1	7
1995	126	2.3	7
1996	116	2.1	10
1997	115	2.0	11
1998	77	1.3	7
1999	93	1.6	4
2000	71	1.2	6
2001	71	1.2	6
2002	76	1.3	8
2003	61	1.0	7
2004	42	0.7	4
2005	53	0.8	4
2006	45	0.7	1
2007	32	0.5	8
2008	40	0.6	4
2009	26	0.4	3
2010	33	0.5	3
2011	22	0.3	0
2012	24	0.4	1
2013	20	0.3	3
2014	17	0.2	2
2015	10	0.1	1

*All rates are cases per 100,000 population.

MUMPS

Year	Cases	Rate*	Deaths
1980	166	4.0	0
1981	165	3.9	0
1982	102	2.4	0
1983	55	1.3	0
1984	56	1.3	0
1985	42	1.0	0
1986	30	0.7	0
1987	70	1.5	0
1988	44	1.0	0
1989	59	1.2	0
1990	66	1.4	0
1991	178	3.5	0
1992	18	0.4	0
1993	14	0.3	0
1994	23	0.4	0
1995	16	0.3	0
1996	26	0.5	0
1997	21	0.4	0
1998	11	0.2	0
1999	2	0.0	0
2000	10	0.2	0
2001	2	0.0	0
2002	0	0.0	0
2003	11	0.2	0
2004	2	0.0	0
2005	3	0.0	0
2006	42	0.7	0
2007	53	0.8	0
2008	14	0.2	0
2009	6	0.1	0
2010	7	0.1	0
2011	2	0.0	0
2012	2	0.0	0
2013	2	0.0	0
2014	9	0.1	0
2015	7	0.1	0

*All rates are cases per 100,000 population.

PERTUSSIS

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	2	*	15	78.7	2	*	11	56.7	1	*
Asotin	0	0.0	4	*	1	*	1	*	1	*
Benton	4	*	85	47.2	8	4.4	7	3.8	4	*
Chelan	2	*	46	62.8	7	9.5	3	*	5	6.7
Clallam	4	*	25	34.7	13	18.0	20	27.6	4	*
Clark	94	22.0	326	75.6	59	13.5	59	13.3	322	71.0
Columbia	0	0.0	1	*	1	*	0	0.0	3	*
Cowlitz	71	69.1	72	69.9	5	4.8	10	9.6	24	23.0
Douglas	0	0.0	10	25.7	3	*	0	0.0	1	*
Ferry	0	0.0	7	91.5	0	0.0	0	0.0	0	0.0
Franklin	5	6.2	45	54.5	5	5.9	4	*	1	*
Garfield	0	0.0	0	0.0	1	*	0	0.0	0	0.0
Grant	30	33.3	53	58.2	58	63.2	35	37.7	14	14.9
Grays Harbor	3	*	24	32.8	1	*	0	0.0	10	13.7
Island	30	38.1	46	58.0	0	0.0	6	7.5	17	21.1
Jefferson	2	*	25	82.9	0	0.0	1	*	30	97.2
King	124	6.4	785	40.1	113	5.7	151	7.5	210	10.2
Kitsap	16	6.3	92	36.1	7	2.8	43	16.8	95	36.8
Kittitas	9	21.8	34	81.9	8	19.1	0	0.0	7	16.4
Klickitat	2	*	6	29.1	2	*	2	*	5	23.8
Lewis	6	7.9	71	93.1	6	7.9	16	21.0	16	20.9
Lincoln	1	*	2	*	1	*	0	0.0	0	0.0
Mason	0	0.0	14	22.8	7	11.3	0	0.0	4	*
Okanogan	2	*	22	53.1	15	36.1	3	*	0	0.0
Pacific	1	*	7	33.4	0	0.0	0	0.0	10	47.1
Pend Oreille	0	0.0	4	*	0	0.0	1	*	1	*
Pierce	129	16.1	783	96.9	116	14.2	86	10.5	157	18.9
San Juan	38	239.0	14	87.9	0	0.0	3	*	0	0.0
Skagit	5	4.3	559	473.9	18	15.2	18	15.1	5	4.1
Skamania	2	*	3	*	0	0.0	0	0.0	1	*
Snohomish	268	37.4	549	75.9	52	7.1	25	3.4	244	32.2
Spokane	18	3.8	198	41.6	48	10.0	26	5.4	48	9.8
Stevens	1	*	42	96.1	3	*	0	0.0	1	*
Thurston	10	3.9	63	24.5	43	16.5	13	4.9	32	12.0
Wahkiakum	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Walla Walla	2	*	55	93.1	1	*	14	23.3	37	61.0
Whatcom	68	33.6	333	163.6	35	17.0	24	11.6	61	29.1
Whitman	2	*	2	*	8	17.4	1	*	2	*
Yakima	11	4.5	493	200.4	101	40.8	17	6.8	10	4.0
STATEWIDE TOTAL	962	14.2	4,916	72.1	748	10.9	600	8.6	1,383	19.6

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

PERTUSSIS STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	77	1.9	0
1981	58	1.4	1
1982	36	0.8	1
1983	20	0.5	0
1984	326	7.5	1
1985	92	2.1	0
1986	163	3.7	2
1987	110	2.4	0
1988	130	2.8	1
1989	201	4.3	0
1990	227	4.7	0
1991	149	3.0	0
1992	241	4.7	0
1993	96	1.8	0
1994	140	2.6	0
1995	491	9.0	0
1996	830	14.9	1
1997	481	8.5	0
1998	406	7.1	1
1999	739	12.7	0
2000	458	7.8	1
2001	184	3.1	0
2002	575	9.5	0
2003	844	13.8	0
2004	842	13.6	0
2005	1,026	16.3	0
2006	377	5.9	1
2007	482	7.4	0
2008	460	7.0	1
2009	291	4.4	0
2010	607	9.0	2
2011	962	14.2	2
2012	4,916	72.1	0
2013	748	10.9	0
2014	600	8.6	0
2015	1,383	19.6	0

*All rates are cases per 100,000 population.

PLAGUE

Year	Cases	Rate*	Deaths
1986	0	0.0	0
1987	0	0.0	0
1988	0	0.0	0
1989	0	0.0	0
1990	0	0.0	0
1991	0	0.0	0
1992	0	0.0	0
1993	0	0.0	0
1994	0	0.0	0
1995	0	0.0	0
1996	0	0.0	0
1997	0	0.0	0
1998	0	0.0	0
1999	0	0.0	0
2000	0	0.0	0
2001	0	0.0	0
2002	0	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	0	0.0	0
2006	0	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	0	0.0	0
2011	0	0.0	0
2012	0	0.0	0
2013	0	0.0	0
2014	0	0.0	0
2015	0	0.0	0

*All rates are cases per 100,000 population.

POLIOMYELITIS

Year	Cases	Rate*	Deaths
1985	0	0.0	0
1986	0	0.0	0
1987	1‡	0.0	0
1988	1‡	0.0	0
1989	0	0.0	0
1990	0	0.0	0
1991	1‡	0.0	0
1992	1‡	0.0	0
1993	1‡	0.0	0
1994	0	0.0	0
1995	0	0.0	0
1996	0	0.0	0
1997	0	0.0	0
1998	0	0.0	0
1999	0	0.0	0
2000	0	0.0	0
2001	0	0.0	0
2002	0	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	0	0.0	0
2006	0	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	0	0.0	0
2011	0	0.0	0
2012	0	0.0	0
2013	0	0.0	0
2014	0	0.0	0
2015	0	0.0	0

*All rates are cases per 100,000 population.

‡Vaccine-associated cases.

PSITTACOSIS

Year	Cases	Rate*	Deaths
1985	3	0.1	1
1986	7	0.2	0
1987	12	0.3	0
1988	8	0.2	0
1989	4	0.1	1
1990	5	0.1	0
1991	6	0.1	0
1992	13	0.3	0
1993	4	0.1	0
1994	4	0.1	0
1995	7	0.1	0
1996	4	0.1	0
1997	0	0.0	0
1998	3	0.1	0
1999	0	0.0	0
2000	1	0.0	0
2001	0	0.0	0
2002	0	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	1	0.0	0
2006	0	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	0	0.0	0
2011	0	0.0	0
2012	0	0.0	0
2013	0	0.0	0
2014	0	0.0	0
2015	0	0.0	0

*All rates are cases per 100,000 population.

Q FEVER

Year	Cases	Rate*	Deaths
1986	2	0.0	0
1987	1	0.0	1
1988	1	0.0	0
1989	0	0.0	0
1990	2	0.0	0
1991	0	0.0	0
1992	1	0.0	0
1993	0	0.0	0
1994	0	0.0	0
1995	1	0.0	0
1996	0	0.0	0
1997	0	0.0	0
1998	0	0.0	0
1999	1	0.0	0
2000	0	0.0	0
2001	0	0.0	0
2002	0	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	2	0.0	0
2006	0	0.0	0
2007	1	0.0	0
2008	0	0.0	0
2009	1	0.0	0
2010	3	0.0	1
2011	8	0.1	0
2012	3	0.0	2
2013	3	0.0	0
2014	1	0.0	0
2015	3	0.0	0

*All rates are cases per 100,000 population.

RABIES (HUMAN)

Year	Cases	Rate*	Deaths
1985	0	0.0	0
1986	0	0.0	0
1987	0	0.0	0
1988	0	0.0	0
1989	0	0.0	0
1990	0	0.0	0
1991	0	0.0	0
1992	0	0.0	0
1993	0	0.0	0
1994	0	0.0	0
1995	1	0.0	1
1996	0	0.0	0
1997	1	0.0	1
1998	0	0.0	0
1999	0	0.0	0
2000	0	0.0	0
2001	0	0.0	0
2002	0	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	0	0.0	0
2006	0	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	0	0.0	0
2011	0	0.0	0
2012	0	0.0	0
2013	0	0.0	0
2014	0	0.0	0
2015	0	0.0	0

*All rates are cases per 100,000 population.

RARE SEXUALLY TRANSMITTED DISEASES

Statewide Total Cases

Year	Total	Chancroid	Granuloma inguinale	Lymphogranuloma venereum
1986	1	1	0	0
1987	7	1	1	5
1988	1	0	0	1
1989	13	6	0	7
1990	3	1	1	1
1991	7	3	2	2
1992	4	2	0	2
1993	4	0	0	4
1994	4	1	0	3
1995	6	5	0	1
1996	2	1	0	1
1997	2	2	0	0
1998	1	1	0	0
1999	0	0	0	0
2000	1	0	0	1
2001	0	0	0	0
2002	1	1	0	0
2003	1	0	0	1
2004	0	0	0	0
2005	3	0	0	3
2006	0	0	0	0
2007	1	0	0	1
2008	5	1	0	4
2009	2	0	0	2
2010	3	1	0	2
2011	1	0	0	1
2012	0	0	0	0
2013	0	0	0	0
2014	0	0	0	0
2015	1	0	0	1

Note: Data prior to 2009 are based on year reported rather than year diagnosed

RELAPSING FEVER

Year	Cases	Rate*	Deaths
1986	2	0.0	0
1987	7	0.2	1
1988	5	0.1	0
1989	5	0.1	0
1990	4	0.1	0
1991	6	0.1	0
1992	6	0.1	0
1993	2	0.0	0
1994	9	0.2	0
1995	12	0.2	0
1996	8	0.1	0
1997	4	0.1	0
1998	5	0.1	0
1999	3	0.1	0
2000	5	0.1	1
2001	1	0.0	0
2002	7	0.1	0
2003	6	0.1	0
2004	6	0.1	0
2005	6	0.1	0
2006	2	0.0	0
2007	9	0.1	0
2008	4	0.1	0
2009	5	0.1	0
2010	7	0.1	0
2011	11	0.2	0
2012	6	0.1	0
2013	4	0.1	0
2014	7	0.1	0
2015	3	0.0	0

*All rates are cases per 100,000 population.

RUBELLA

Year	Cases	Rate*	Deaths
1981	108	2.6	0
1982	58	1.4	0
1983	10	0.2	0
1984	2	0.0	0
1985	16	0.4	0
1986	15	0.3	0
1987	2	0.0	0
1988	0	0.0	0
1989	2	0.0	0
1990	6	0.1	0
1991	8	0.2	0
1992	8	0.2	0
1993	3	0.1	0
1994	0	0.0	0
1995	2	0.0	0
1996	15	0.3	0
1997	5	0.1	0
1998	5	0.1	0
1999	5	0.1	0
2000	8	0.1	0
2001	0	0.0	0
2002	2	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	1	0.0	0
2006	0	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	1	0.0	0
2011	2	0.0	0
2012	0	0.0	0
2013	1	0.0	0
2014	0	0.0	0
2015	0	0.0	0

*All rates are cases per 100,000 population.

SALMONELLOSIS

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	3	*	2	*	3	*	1	*	2	10.3
Asotin	2	*	1	*	1	*	2	*	0	0.0
Benton	12	6.7	30	16.7	27	14.7	23	12.5	26	13.8
Chelan	8	11.0	6	8.2	2	*	5	6.7	6	8.0
Clallam	0	0.0	3	*	5	6.9	4	*	5	6.9
Clark	50	11.7	156	36.2	46	10.6	58	13.1	49	10.8
Columbia	2	*	0	0.0	0	0.0	1	*	0	0.0
Cowlitz	7	6.8	16	15.5	9	8.7	14	13.5	15	14.4
Douglas	3	*	4	*	2	*	0	*	2	*
Ferry	2	*	5	65.4	0	0.0	2	*	0	0.0
Franklin	8	9.9	7	8.5	15	17.7	10	11.5	11	12.6
Garfield	1	*	0	0.0	0	0.0	1	*	1	*
Grant	4	*	15	16.5	14	15.3	12	12.9	10	10.6
Grays Harbor	6	8.2	7	9.6	7	9.6	5	6.8	5	6.8
Island	3	*	7	8.8	7	8.8	7	8.8	6	7.4
Jefferson	1	*	4	*	5	16.5	1	*	1	*
King	193	9.9	219	11.2	199	10.0	229	11.4	435	21.2
Kitsap	25	9.8	16	6.3	19	7.5	29	11.3	22	8.5
Kittitas	3	*	7	16.9	5	11.9	2	*	6	14.1
Klickitat	5	24.4	0	0.0	2	*	4	*	2	*
Lewis	10	13.2	6	7.9	5	6.6	12	15.7	8	10.4
Lincoln	1	*	1	*	2	*	0	0.0	1	*
Mason	3	*	3	*	9	14.6	6	9.7	9	14.5
Okanogan	1	*	0	0.0	1	*	4	*	1	*
Pacific	0	0.0	2	*	2	*	0	0.0	2	*
Pend Oreille	0	0.0	8	61.1	1	*	1	*	0	0.0
Pierce	53	6.6	75	9.3	74	9.2	77	9.4	95	11.4
San Juan	0	0.0	2	*	0	0.0	2	*	8	49.4
Skagit	3	*	15	12.7	15	12.6	9	7.5	6	5.0
Skamania	0	0.0	0	0.0	1	*	0	0.0	2	*
Snohomish	77	10.7	67	9.3	64	8.8	89	12.0	120	15.8
Spokane	39	8.3	63	13.2	33	6.9	30	6.2	45	9.2
Stevens	1	*	6	13.7	6	13.7	5	11.4	5	11.4
Thurston	13	5.1	34	13.2	32	12.3	22	8.3	40	15.0
Wahkiakum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Walla Walla	11	18.7	3	*	8	13.4	2	*	8	13.2
Whatcom	19	9.4	14	6.9	16	7.8	15	7.2	26	12.4
Whitman	2	*	12	26.1	2	*	4	*	6	12.7
Yakima	18	7.4	26	10.6	31	12.5	53	21.3	48	19.2
STATEWIDE TOTAL	589	8.7	842	12.4	670	9.7	741	10.6	1,034	14.6

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

SALMONELLOSIS STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	462	11.2	0
1981	574	13.6	5
1982	749	17.5	0
1983	739	17.2	0
1984	515	11.8	0
1985	565	12.8	0
1986	783	17.5	2
1987	660	14.6	1
1988	612	13.3	0
1989	630	13.3	2
1990	634	13.0	6
1991	791	15.8	1
1992	609	11.8	1
1993	830	15.8	0
1994	863	16.1	0
1995	691	12.6	0
1996	734	13.2	0
1997	675	11.9	0
1998	703	12.2	2
1999	792	13.6	2
2000	659	11.2	1
2001	681	11.4	2
2002	655	10.8	0
2003	699	11.4	1
2004	660	10.6	2
2005	626	9.9	0
2006	627	9.8	3
2007	758	11.6	2
2008	846	12.8	3
2009	820	12.3	2
2010	780	11.6	3
2011	589	8.7	2
2012	842	12.4	0
2013	671	9.7	1
2014	741	10.6	2
2015	1,034	14.6	1

*All rates are cases per 100,000 population.

SHELLFISH POISONING: PARALYTIC, DOMOIC ACID, DIARRHETIC

Year	Cases	Rate*	Deaths
1985	3	0.1	0
1986	0	0.0	0
1987	0	0.0	0
1988	7	0.2	0
1989	0	0.0	0
1990	0	0.0	0
1991	0	0.0	0
1992	0	0.0	0
1993	0	0.0	0
1994	0	0.0	0
1995	0	0.0	0
1996	0	0.0	0
1997	0	0.0	0
1998	5	0.1	0
1999	0	0.0	0
2000	7	0.1	0
2001	0	0.0	0
2002	0	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	1	0.0	0
2006	1	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	0	0.0	0
2011	0	0.0	0
2012	9	0.1	0
2013	0	0.0	0
2014	0	0.0	0
2015	1	0.0	0

*All rates are cases per 100,000 population.

SHIGA TOXIN-PRODUCING *ESCHERICHIA COLI* (STEC)

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	0.0	1	5.2	3	*
Asotin	0	0.0	2	*	2	*	1	4.6	1	*
Benton	6	3.4	2	*	12	6.5	9	4.9	8	4.2
Chelan	0	0.0	3	*	5	6.8	3	4.0	4	*
Clallam	0	0.0	2	*	2	*	0	0.0	2	*
Clark	12	2.8	27	6.3	51	11.7	27	6.1	45	10.0
Columbia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cowlitz	1	*	7	6.8	0	0.0	3	*	8	7.7
Douglas	2	*	0	0.0	0	0.0	0	0.0	1	*
Ferry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	2	*	1	*	4	*	6	6.9	2	*
Garfield	1	*	0	0.0	0	0.0	1	*	1	*
Grant	7	7.8	7	7.7	6	6.5	5	5.4	9	9.6
Grays Harbor	1	*	1	*	2	*	5	6.8	4	*
Island	0	0.0	1	*	6	7.5	2	*	3	*
Jefferson	1	*	4	*	0	0.0	0	0.0	2	*
King	56	2.9	71	3.6	72	3.6	93	4.6	113	5.5
Kitsap	0	0.0	6	2.4	1	*	9	3.5	3	*
Kittitas	6	14.5	6	14.5	6	14.3	7	16.6	4	*
Klickitat	2	*	3	*	1	*	2	*	0	0.0
Lewis	1	*	2	*	6	7.9	8	10.5	6	7.8
Lincoln	0	0.0	0	0.0	1	*	1	*	1	*
Mason	0	0.0	1	*	2	*	1	*	0	0.0
Okanogan	1	*	1	*	2	*	2	*	1	*
Pacific	1	*	0	0.0	0	0.0	0	0.0	0	0.0
Pend Oreille	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Pierce	22	2.7	11	1.4	14	1.7	16	1.9	26	3.1
San Juan	0	0.0	0	0.0	2	*	0	0.0	0	0.0
Skagit	2	*	4	*	9	7.6	11	9.2	12	9.9
Skamania	1	*	1	*	0	0.0	0	0.0	0	0.0
Snohomish	27	3.8	21	2.9	42	5.7	22	3.0	35	4.6
Spokane	14	3.0	13	2.7	19	4.0	16	3.3	17	3.5
Stevens	0	0.0	3	*	4	*	1	*	2	*
Thurston	11	4.3	13	5.1	20	7.7	14	5.3	8	3.0
Wahkiakum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Walla Walla	1	*	0	0.0	2	*	1	*	1	*
Whatcom	11	5.4	14	6.9	15	7.3	17	8.2	75	35.8
Whitman	2	*	3	*	0	0.0	0	0.0	2	*
Yakima	12	4.9	8	3.3	22	8.9	15	6.0	20	8.0
STATEWIDE TOTAL	203	3.0	239	3.5	330	4.8	299	4.3	419	5.9

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

SHIGA TOXIN-PRODUCING *ESCHERICHIA COLI (STEC)* STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1988	167	3.6	0
1989	157	3.3	1
1990	220	4.5	0
1991	164	3.3	0
1992	300	5.8	2
1993	741	14.1	3
1994	174	3.2	2
1995	140	2.6	1
1996	187	3.4	1
1997	149	2.6	0
1998	144	2.5	0
1999	186	3.2	0
2000	237	4.0	0
2001	150	2.5	0
2002	166	2.7	0
2003	128	2.1	0
2004	153	2.5	3
2005	149	2.4	0
2006	162	2.5	0
2007	141	2.2	0
2008	189	2.9	1
2009	206	3.1	0
2010	226	3.4	1
2011	203	3.0	1
2012	239	3.5	0
2013	330	4.8	3
2014	229	4.3	2
2015	419	5.9	1

*All rates are cases per 100,000 population.

SHIGELLOSIS

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	20	104.2	4	20.6	5	25.8
Asotin	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Benton	3	*	5	2.8	2	*	3	*	2	*
Chelan	0	0.0	2	*	1	*	2	*	1	*
Clallam	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Clark	12	2.8	14	3.2	11	2.5	14	3.2	10	2.2
Columbia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cowlitz	0	0.0	0	0.0	0	0.0	0	0.0	2	*
Douglas	0	0.0	0	0.0	0	0.0	0	0.0	1	*
Ferry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	5	6.2	2	*	2	2.4	0	0.0	1	*
Garfield	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grant	0	0.0	1	*	9	9.9	1	*	7	7.5
Grays Harbor	1	*	3	*	1	*	0	0.0	0	0.0
Island	0	0.0	0	0.0	0	0.0	0	0.0	2	*
Jefferson	2	*	0	0.0	0	0.0	0	0.0	0	0.0
King	41	2.1	74	3.8	43	2.2	71	3.5	78	3.8
Kitsap	0	0.0	1	*	3	*	2	*	6	2.3
Kittitas	1	*	0	0.0	0	0.0	0	0.0	2	*
Klickitat	1	*	0	0.0	0	0.0	0	0.0	0	0.0
Lewis	0	0.0	0	0.0	1	*	0	0.0	0	0.0
Lincoln	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mason	1	*	2	*	1	*	0	0.0	0	0.0
Okanogan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pacific	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pend Oreille	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pierce	2	*	5	0.6	4	*	6	0.7	14	1.7
San Juan	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Skagit	8	6.8	1	*	0	0.0	4	*	0	0.0
Skamania	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Snohomish	9	1.3	16	2.2	8	1.1	13	1.8	15	2.0
Spokane	4	*	1	*	3	*	11	2.3	2	*
Stevens	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Thurston	1	*	2	*	1	*	5	1.9	1	*
Wahkiakum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Walla Walla	0	0.0	2	*	0	0.0	0	0.0	0	0.0
Whatcom	2	*	1	*	5	2.4	4	*	1	*
Whitman	0	0.0	0	0.0	1	*	1	*	1	*
Yakima	11	4.5	1	*	6	2.4	15	6.0	1	*
STATEWIDE TOTAL	104	1.5	133	2.0	122	1.8	157	2.3	152	2.2

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

SHIGELLOSIS STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	287	6.9	0
1981	426	10.1	1
1982	284	6.6	0
1983	370	8.6	0
1984	224	5.1	0
1985	144	3.3	0
1986	321	7.2	0
1987	318	7.0	0
1988	306	6.6	0
1989	232	4.9	0
1990	278	5.7	0
1991	405	8.1	0
1992	439	8.5	0
1993	797	15.1	0
1994	478	8.9	0
1995	426	7.8	0
1996	333	6.0	1
1997	318	5.6	0
1998	277	4.8	0
1999	172	2.9	0
2000	501	8.5	0
2001	236	4.0	0
2002	230	3.8	0
2003	188	3.1	0
2004	133	2.1	0
2005	185	2.9	0
2006	170	2.6	0
2007	159	2.4	0
2008	116	1.8	0
2009	153	2.3	0
2010	112	1.7	0
2011	104	1.5	0
2012	133	2.0	0
2013	122	1.8	0
2014	157	2.3	0
2015	152	2.2	0

*All rates are cases per 100,000 population.

SYPHILIS (PRIMARY AND SECONDARY)

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	+	2	+	0	+
Asotin	0	0.0	0	0.0	0	+	0	+	0	+
Benton	1	*	0	0.0	7	+	18	+	13	+
Chelan	0	0.0	0	0.0	0	+	0	+	1	1.3
Clallam	0	0.0	0	0.0	0	+	1	+	1	1.4
Clark	5	1.2	23	5.3	22	5.1	20	4.5	21	4.7
Columbia	0	0.0	0	0.0	0	+	1	+	0	+
Cowlitz	0	0.0	1	*	1	+	8	+	4	+
Douglas	0	0.0	0	0.0	0	+	0	+	0	+
Ferry	0	0.0	0	0.0	0	+	0	+	0	+
Franklin	5	6.2	3	*	4	+	6	+	6	+
Garfield	0	0.0	0	0.0	0	+	0	+	0	+
Grant	2	*	1	*	1	+	4	+	9	+
Grays Harbor	0	0.0	0	0.0	0	+	3	+	0	+
Island	0	0.0	0	0.0	2	+	1	+	0	+
Jefferson	0	0.0	0	0.0	0	+	0	+	0	+
King	235	12.1	210	10.7	174	8.8	173	8.6	250	12.3
Kitsap	5	2.0	5	2.0	4	+	6	+	6	+
Kittitas	1	*	1	*	3	+	1	+	3	+
Klickitat	0	0.0	0	0.0	0	+	0	+	0	+
Lewis	1	*	0	0.0	0	+	1	+	1	+
Lincoln	0	0.0	0	0.0	0	+	0	+	0	+
Mason	0	0.0	2	*	0	+	0	+	4	+
Okanogan	0	0.0	0	0.0	0	+	0	+	1	+
Pacific	0	0.0	0	0.0	0	+	0	+	0	+
Pend Oreille	0	0.0	0	0.0	0	+	0	+	0	+
Pierce	27	3.4	22	2.7	28	3.4	30	3.7	41	5.0
San Juan	0	0.0	0	0.0	0	+	0	+	0	+
Skagit	0	0.0	1	*	2	+	2	+	5	+
Skamania	1	*	0	0.0	0	+	1	+	1	+
Snohomish	16	2.2	12	1.7	13	1.8	27	3.6	25	3.4
Spokane	14	3.0	5	1.1	2	+	11	+	28	5.7
Stevens	1	*	0	0.0	0	+	0	+	1	+
Thurston	3	*	2	*	3	+	2	+	9	+
Wahkiakum	0	0.0	0	0.0	0	+	0	+	0	+
Walla Walla	0	0.0	0	0.0	0	+	1	+	3	+
Whatcom	3	*	4	*	5	+	2	+	6	+
Whitman	0	0.0	2	*	0	+	1	+	1	+
Yakima	9	3.7	6	2.4	14	+	15	+	7	+
STATEWIDE TOTAL	329	4.9	300	4.4	285	4.1	337	4.8	452	6.5

All incidence rates are cases per 100,000 population.
*For 2011-2012, incidence rates not calculated for <5 cases.
+For 2013-2015, incidence rates suppressed for counts <20 and rates with residual standard error (RSE) >30% due to statistical instability.

SYPHILIS PRIMARY AND SECONDARY STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1982	172	4.0	0
1983	196	4.6	0
1984	158	3.6	2
1985	115	2.6	2
1986	194	4.3	0
1987	176	3.9	0
1988	265	5.7	0
1989	461	9.8	0
1990	354	7.3	0
1991	178	3.5	0
1992	85	1.7	0
1993	67	1.3	0
1994	36	0.7	0
1995	17	0.3	0
1996	9	0.2	0
1997	17	0.3	0
1998	44	0.8	0
1999	77	1.3	0
2000	66	1.1	0
2001	57	1.0	0
2002	70	1.2	0
2003	82	1.3	0
2004	150	2.4	0
2005	152	2.4	0
2006	182	2.8	0
2007	168	2.6	0
2008	181	2.7	0
2009	135	2.0	0
2010	261	3.9	0
2011	329	4.9	0
2012	300	4.4	0
2013	285	4.1	0
2014	337	4.8	0
2015	452	6.5	0

*All rates are cases per 100,000 population.

Note: Data prior to 2009 are based on year reported rather than year diagnosed.

TETANUS

Year	Cases	Rate*	Deaths
1985	0	0.0	0
1986	0	0.0	0
1987	1	0.0	0
1988	1	0.0	0
1989	1	0.0	0
1990	1	0.0	0
1991	1	0.0	0
1992	3	0.1	0
1993	1	0.0	0
1994	1	0.0	0
1995	0	0.0	0
1996	1	0.0	0
1997	1	0.0	0
1998	0	0.0	0
1999	0	0.0	0
2000	1	0.0	0
2001	0	0.0	0
2002	0	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	1	0.0	0
2006	0	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	0	0.0	0
2011	0	0.0	0
2012	1	0.0	0
2013	0	0.0	0
2014	3	0.0	1
2015	0	0.0	0

*All rates are cases per 100,000 population.

TRICHINOSIS

Year	Cases	Rate*	Deaths
1986	0	0.0	0
1987	0	0.0	0
1988	0	0.0	0
1989	2	0.0	0
1990	1	0.0	0
1991	0	0.0	0
1992	1	0.0	0
1993	1	0.0	0
1994	0	0.0	0
1995	0	0.0	0
1996	0	0.0	0
1997	0	0.0	0
1998	0	0.0	0
1999	0	0.0	0
2000	1	0.0	0
2001	0	0.0	0
2002	0	0.0	0
2003	0	0.0	0
2004	0	0.0	0
2005	0	0.0	0
2006	1	0.0	0
2007	0	0.0	0
2008	0	0.0	0
2009	0	0.0	0
2010	0	0.0	0
2011	0	0.0	0
2012	0	0.0	0
2013	0	0.0	0
2014	2	0.0	0
2015	1	0,0	0

*All rates are cases per 100,000 population.

TUBERCULOSIS

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	-	0	-	1	*	0	-	0	-
Asotin	0	-	0	-	0	-	0	-	0	-
Benton	0	-	0	-	1	*	2	*	3	*
Chelan	0	-	0	-	2	*	0	-	4	*
Clallam	2	*	0	-	1	*	0	-	0	-
Clark	10	2.3	7	1.6	5	1.1	15	3.4	6	1.3
Columbia	0	-	0	-	0	-	0	-	0	-
Cowlitz	1	*	0	-	2	*	3	*	2	*
Douglas	0	-	0	-	1	*	0	-	2	*
Ferry	0	-	0	-	0	-	0	-	0	-
Franklin	3	*	3	*	2	*	4	*	3	*
Garfield	0	-	0	-	0	-	0	-	0	-
Grant	0	-	1	*	0	-	1	*	0	-
Grays Harbor	1	*	2	*	1	*	0	-	0	-
Island	2	*	0	-	1	*	0	-	0	-
Jefferson	0	-	0	-	0	-	0	-	0	-
King	106	5.5	108	5.5	114	5.8	100	5.0	98	4.8
Kitsap	2	*	4	*	1	*	5	2.0	5	1.9
Kittitas	0	-	0	-	0	-	0	-	1	*
Klickitat	0	-	0	-	0	-	0	-	0	-
Lewis	0	-	0	-	0	-	0	-	1	*
Lincoln	0	-	0	-	0	-	0	-	0	-
Mason	1	*	2	*	3	*	0	-	0	-
Okanogan	0	-	0	-	2	*	1	*	1	*
Pacific	0	-	0	-	0	-	1	*	2	*
Pend-Oreille	0	-	0	-	0	-	0	-	0	-
Pierce	25	3.1	19	2.4	22	2.7	13	1.6	16	1.9
San Juan	0	-	0	-	1	*	0	-	0	-
Skagit	2	*	3	*	4	*	2	*	4	*
Skamania	0	-	0	-	1	*	1	*	0	-
Snohomish	23	3.2	18	2.5	26	3.6	19	2.6	30	4.0
Spokane	8	1.7	7	1.5	7	1.5	5	1.0	2	*
Stevens	0	-	0	-	0	-	0	-	0	-
Thurston	5	2.0	5	1.9	5	1.9	7	2.7	6	2.2
Wahkiakum	0	-	0	-	0	-	0	-	0	-
Walla Walla	0	-	0	-	1	*	0	-	1	*
Whatcom	2	*	1	*	4	*	4	*	7	3.3
Whitman	0	-	0	-	0	-	0	-	2	*
Yakima	6	2.5	5	2.0	2	*	11	4.4	12	4.8
STATEWIDE TOTAL	199	2.9	185	2.7	210	3.1	194	2.8	208	2.9

*All rates are reported as cases per 100,000 population. Incidence rates are suppressed for case counts <5 due to inherent instability of resulting estimate.

TUBERCULOSIS STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1980	424	10.3	13
1981	401	9.5	15
1982	301	7.0	6
1983	239	5.5	10
1984	207	4.8	6
1985	220	5.0	5
1986	218	4.9	3
1987	255	5.6	10
1988	236	5.1	9
1989	248	5.2	4
1990	284	5.8	12
1991	309	6.2	7
1992	306	6.0	7
1993	286	5.4	7
1994	264	4.9	6
1995	278	5.1	2
1996	285	5.1	3
1997	305	5.4	6
1998	265	4.6	5
1999	258	4.4	5
2000	258	4.4	2
2001	261	4.4	6
2002	252	4.2	4
2003	250	4.1	11
2004	245	3.9	9
2005	255	4.0	14
2006	262	4.1	18
2007	291	4.5	12
2008	228	3.5	2
2009	255	3.8	7
2010	234	3.5	6
2011	199	2.9	7
2012	185	2.7	6
2013	210	3.1	5
2014	194	2.8	3
2015	208	2.9	4

*All rates are reported as cases per 100,000 population.

Tuberculosis-related deaths include:
1. Cases deceased at diagnosis for whom tuberculosis was reported among cause(s) of death; and
2. Cases alive at diagnosis stopping treatment prematurely, for whom the reason for treatment stoppage was reported as being TB-related death.

Note: TB-related death events are reported here as per the year of death in the TB surveillance record, and may have occurred in a year other than that of diagnosis. Death data above as generated from TB surveillance data may differ from comparable data sourced from vital records mortality data.

TULAREMIA

Year	Cases	Rate*	Deaths
1986	1	0.0	0
1987	4	0.1	0
1988	1	0.0	0
1989	2	0.0	0
1990	4	0.1	0
1991	2	0.0	0
1992	2	0.0	0
1993	2	0.0	0
1994	1	0.0	0
1995	4	0.1	0
1996	2	0.0	0
1997	2	0.0	0
1998	8	0.1	0
1999	2	0.0	0
2000	2	0.0	0
2001	5	0.1	0
2002	3	0.0	0
2003	2	0.0	0
2004	4	0.1	0
2005	10	0.2	0
2006	1	0.0	0
2007	1	0.0	0
2008	4	0.1	0
2009	5	0.1	1
2010	3	0.0	0
2011	5	0.1	0
2012	5	0.1	0
2013	5	0.1	0
2014	4	0.1	0
2015	4	0.1	0

*All rates are cases per 100,000 population.

TYPHOID FEVER

Year	Cases	Rate*	Deaths
1985	3	0.1	0
1986	3	0.1	0
1987	9	0.2	0
1988	13	0.3	0
1989	11	0.2	0
1990	22	0.5	0
1991	10	0.2	0
1992	11	0.2	0
1993	8	0.2	0
1994	12	0.2	0
1995	4	0.1	0
1996	4	0.1	0
1997	7	0.1	0
1998	8	0.1	0
1999	8	0.1	0
2000	6	0.1	0
2001	7	0.1	0
2002	7	0.1	0
2003	4	0.1	0
2004	6	0.1	0
2005	11	0.2	0
2006	7	0.1	0
2007	7	0.1	0
2008	15	0.2	0
2009	4	0.1	0
2010	22	0.3	0
2011	9	0.1	0
2012	11	0.2	0
2013	11	0.2	0
2014	15	0.2	0
2015	10	0.1	0

*All rates are cases per 100,000 population.

VIBRIOSIS

Year	Cases	Rate*	Deaths
1985	4	0.1	0
1986	7	0.2	0
1987	18	0.4	0
1988	11	0.2	0
1989	4	0.1	0
1990	30	0.6	0
1991	4	0.1	0
1992	7	0.1	0
1993	33	0.6	0
1994	9	0.2	0
1995	6	0.1	0
1996	3	0.1	0
1997	58	1.0	0
1998	41	0.7	0
1999	21	0.4	0
2000	20	0.3	0
2001	9	0.2	0
2002	25	0.4	0
2003	18	0.3	0
2004	28	0.5	0
2005	20	0.3	0
2006	80	1.2	0
2007	25	0.4	0
2008	29	0.4	0
2009	48	0.7	0
2010	59	0.9	0
2011	45	0.7	0
2012	67	1.0	0
2013	90	1.3	0
2014	92	1.3	0
2015	68	1.0	0

*All rates are cases per 100,000 population.

YERSINIOSIS

	2011		2012		2013		2014		2015	
County	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Adams	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Asotin	1	*	0	0.0	0	0.0	0	0.0	0	0.0
Benton	1	*	1	*	2	*	0	0.0	2	*
Chelan	0	0.0	0	0.0	0	0.0	0	0.0	1	*
Clallam	1	*	0	0.0	0	0.0	0	0.0	0	0.0
Clark	1	*	0	0.0	1	*	5	1.1	0	0.0
Columbia	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Cowlitz	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Douglas	0	0.0	0	0.0	0	0.0	0	0.0	1	*
Ferry	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Franklin	0	0.0	0	0.0	0	0.0	1	*	2	*
Garfield	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grant	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Grays Harbor	0	0.0	0	0.0	0	0.0	0	0.0	1	*
Island	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Jefferson	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
King	5	0.3	23	1.2	14	0.7	17	0.8	16	0.8
Kitsap	2	*	1	*	1	*	5	2.0	1	*
Kittitas	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Klickitat	0	0.0	0	0.0	2	*	0	0.0	1	*
Lewis	0	0.0	0	0.0	0	0.0	1	*	0	0.0
Lincoln	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Mason	0	0.0	0	0.0	2	*	0	0.0	0	0.0
Okanogan	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pacific	0	0.0	0	0.0	1	*	1	*	0	0.0
Pend Oreille	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Pierce	2	*	1	*	0	0.0	0	0.0	4	*
San Juan	0	0.0	0	0.0	1	*	0	0.0	2	*
Skagit	0	0.0	0	0.0	1	*	0	0.0	1	*
Skamania	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Snohomish	5	0.7	4	*	4	*	3	*	3	*
Spokane	0	0.0	1	*	0	0.0	1	*	2	*
Stevens	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Thurston	1	*	1	*	1	*	0	0.0	0	0.0
Wahkiakum	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Walla Walla	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Whatcom	1	*	2	*	2	*	1	*	0	0.0
Whitman	0	0.0	1	*	0	0.0	0	0.0	0	0.0
Yakima	1	*	1	*	2	*	0	0.0	3	*
STATEWIDE TOTAL	21	0.3	36	0.5	34	0.5	36	0.5	40	0.6

*All rates are cases per 100,000 population. Incidence rates not calculated for <5 cases.

YERSINIOSIS STATEWIDE BY YEAR

Year	Cases	Rate*	Deaths
1988	15	0.3	0
1989	40	0.8	0
1990	37	0.8	0
1991	28	0.6	0
1992	34	0.7	0
1993	50	0.9	0
1994	40	0.7	0
1995	50	0.9	0
1996	37	0.7	0
1997	30	0.5	0
1998	39	0.7	0
1999	32	0.5	0
2000	33	0.6	0
2001	23	0.4	0
2002	26	0.4	0
2003	28	0.5	0
2004	34	0.5	0
2005	19	0.3	0
2006	22	0.3	0
2007	28	0.4	0
2008	19	0.3	1
2009	15	0.2	0
2010	25	0.4	0
2011	21	0.3	0
2012	36	0.5	0
2013	34	0.5	0
2014	36	0.5	0
2015	40	0.6	0

*All rates are cases per 100,000 population.

APPENDIX II

Special Topics

Local Health Jurisdiction Contributors are acknowledged for special topics.

Fatal Infection Associated with Equine Exposure

Public Health Seattle and King County, V. Kawakami

On March 17, 2016, Public Health—Seattle & King County was notified of two persons who received a diagnosis of *Streptococcus equi* subspecies *zooepidemicus* (*S. zooepidemicus*) infections. *S. zooepidemicus* is a zoonotic pathogen that rarely causes human illness and is usually associated with consuming unpasteurized dairy products or with direct horse contact. In horses, *S. zooepidemicus* is a commensal bacterium that can cause respiratory, wound, and uterine infections.

Patient A, a previously healthy woman aged 37 years, operated a horse boarding and riding facility in King County. Patient A fed, groomed, and exercised the facility's six horses and cleaned the stalls daily. During the week of February 21, 2016, patient A developed mild pharyngitis and cough. During the week of February 21, horse A developed mucopurulent ocular and nasal discharge and lethargy. On February 29, patient A began administering 10 days of sulfa-based antibiotics to horse A, which recovered without incident.

Patient B, a previously healthy woman aged 71 years and the mother of patient A, developed symptoms consistent with an upper respiratory infection during the week of February 21 while visiting patient A and living in the same household. On March 2, she developed vomiting and diarrhea. On March 3, she was found unconscious and transported to a hospital, where she died that day. Patient B had close contact (i.e., riding, petting, and walking) with horse A on at least February 25 and February 29.

Culture results of nasal swabs collected on March 10 from horse A and two other horses that appeared well were positive for *S. zooepidemicus*. Patient A did not report consumption of unpasteurized dairy products or exposure to other animals, apart from one healthy cat, during the preceding 2 months. A throat culture from patient A obtained March 10 and blood cultures from patient B grew *S. zooepidemicus* isolates indistinguishable by pulsed-field gel electrophoresis from isolates cultured from horse A and a second horse at the facility. *S. zooepidemicus* cultured from a third horse did not match other isolates.

Although *S. zooepidemicus* is a rare zoonotic pathogen in humans, older persons might be at increased risk for a fatal outcome from this infection. Consistently practicing thorough hand washing with soap and water after contact with horses and other animals or areas where animals are housed is recommended. This outbreak highlights the need for more research regarding risk factors for zoonotic transmission and spectrum of human illness associated with *S. zooepidemicus*.

An outbreak summary has been published at:
http://www.cdc.gov/mmwr/volumes/65/wr/mm6530a5.htm

Salmonella I 4,[5],12:i:- and Infantis
Multistate outbreak

In April 2015 a single case of *Salmonella* with serotype I 4,[5],12:i:- was reported to the Washington State Department of Health (DOH). Additional cases with the same serotype were reported in May and June, initiating an investigation into the source of the illnesses. Reports of persons infected continued to rise through July. Of 123 people for whom information was available, 94 (76 percent) reported eating pork in the week before becoming ill. Traceback investigations noted many of the illnesses were related to consumption of whole pigs for barbecue or other pork products produced at a slaughter facility in Pierce County. Environmental samples collected by DOH confirmed presence of the outbreak strain of *Salmonella* I 4,[5],12:i:- in the facility.

On August 13, 2015 the facility voluntarily recalled approximately 116,262 pounds of whole pigs. The facility took steps to address sanitary conditions, but additional samples collected by the US Department of Agriculture identified *Salmonella* I 4,[5],12:i:- and *Salmonella* Infantis on whole pigs for barbeque, on associated pork products, and throughout the facility. On August 27, 2015, the slaughter facility issued an expanded recall of approximately 523,380 pounds of pork products and voluntarily suspended operations.

Between April 25, 2015 and September 25, 2015, there were 192 people from five states infected with the outbreak strains of *Salmonella* I 4,[5],12:i:- (188) and *Salmonella* Infantis (four). The majority (184 people) were Washington residents. Ten isolates were collected for antibiotic-resistance testing and all (100 percent) were multidrug resistant. This included resistance to ampicillin, streptomycin, sulfisoxazole, and tetracycline.

STEC O26
Multistate outbreak

On October 28, 2015, the DOH was notified of nine cases of Shiga toxin-producing *Escherichia coli* (STEC) in Clark County who had eaten at locations of a Mexican restaurant chain in Hazel Dell, Washington and Cascade Station, Oregon. By October 30, additional STEC cases with restaurant exposure were reported from four other counties and the Mexican restaurant chain decided to close all Washington locations in addition to locations in metropolitan areas of Oregon. The agent was identified as STEC serotype O26 with a single matching pulsed-field gel electrophoresis (PFGE) pattern. There were 27 confirmed cases in Washington, 26 of whom had eaten at one of five Mexican restaurant chain locations in Washington or Oregon within ten days prior to illness onset, and one with no Mexican restaurant chain exposure. Illness onset ranged from October 19 to October 31 and meal dates ranged from October 13 through October 24. Confirmed cases were in Clark (13), Cowlitz (two), Island (two), King (four), and Skagit (six) counties.

Nationally, an additional 28 cases were identified in California (three), Delaware (one), Illinois (one), Kentucky (one), Maryland (one), Minnesota (two), New York (one), Ohio (3), Oregon (13), and Pennsylvania (two), with December 5 the latest illness onset date reported. DOH worked with Oregon, FDA, and CDC to identify the ingredient or meal item that was the source of the outbreak, but no source was confirmed. The 43 outlets closed in Washington and Oregon were reopened on or just after November 11 following recommendations developed by DOH Environmental Public Health (EPH).

Highly Antibiotic Resistant Bacterial Surveillance
Carbapenem-resistant Enterobacteriaceae (CRE) and other carbapenemase-producing organisms (CPO)

In 2012 DOH began tracking carbapenem-resistant Enterobacteriaceae (CRE). Goals of surveillance were to learn how common these organisms are in Washington, to determine the proportion of CRE that produce a carbapenemase (an enzyme inactivating certain antibiotics), and to use surveillance information to educate healthcare providers and facilities regarding infection prevention interventions to limit the spread of CRE in Washington. The family Enterobacteriaceae includes common genera such as *Escherichia coli, Klebsiella*, and *Enterobacter* and is an important cause of healthcare-associated infections. CRE are resistant to drugs of last resort and have high morbidity and mortality.

CRE can be resistant to carbapenems through two main mechanisms: 1) resistance to broad spectrum antibiotics such as second and third generation cephalosporins due to extended-spectrum β-lactamase (ESBL) production or class C cephalosporinase (AmpC) resistance, plus a change in the porin structure that doesn't allow carbapenems into the cell, or 2) production of a carbapenemase. CRE that produce carbapenemases, such as *Klebsiella pneumoniae* carbapenemase (KPC), New Delhi metallo-β-lactamases (NDM), Verona integron-encoded metallo-β-lactamases (VIM), imipenemase (IMP), and oxacillinase-48-like (OXA-48), are considered epidemiologically important because they can spread exponentially in healthcare settings, as evidenced by the rapid increase in CRE in the United States over the past decade. Carbapenemases are usually inherited via plasmids.

The Washington State CRE case definition changed in May of 2015. The case definitions in effect in 2015 are below:

January – April 2015 (same as 2014 case definition)

E. coli and *Klebsiella* species resistant to one or more carbapenem (if isolate is only non-susceptible to ertapenem, it must be resistant to ertapenem with MIC >=2 mcg/ml or zone <=18 mm);

AND

Any other Enterobacteriaceae meeting above susceptibility profile AND obtained from a patient hospitalized outside of Washington or Oregon within the prior six months.

May – December 2015:

E. coli, Klebsiella species and *Enterobacter* species resistant to any carbapenem according to Clinical Laboratory Standards Institute (CLSI) breakpoints (minimum inhibitory concentrations of ≥ 4 mcg/ml for meropenem, imipenem, and doripenem or ≥ 2 mcg/ml for ertapenem). Washington State Public Health Laboratories (PHL) accepted additional genera within the family Enterobacteriaceae and other Gram-negative isolates for carbapenemase testing if specifically requested by a healthcare provider or microbiologist.

PHL performed polymerase chain reaction (PCR) testing to detect presence of the five most common carbapenemases found in Enterobacteriaceae in the United States: KPC, NDM, OXA-48, IMP and VIM.

This report includes CRE isolates collected in 2015, as well as other non-Enterobacteriaceae carbapenemase-producing Gram-negative organisms identified and reported to DOH. Reported isolates were from residents of Washington, some of whom were diagnosed out of state, and from residents of other states or countries who were diagnosed in Washington. For persons with more than one of the same genus-species isolate submitted, we have counted only the first and excluded all

subsequent isolates of the same genus, species, and carbapenemase (if any). Any additional isolates submitted of a different genus, species, or carbapenemase from the same person were counted. Screening surveillance isolates were counted only if carbapenem-resistant. For isolates from a single person that produced more than one carbapenemase, each was counted separately.

There were 176 CRE isolates that met the case definition, and 15 of 176 (nine percent) isolates tested positive by PCR for carbapenemase. These 15 carbapenemase-producing CRE (CP-CRE) isolates were from 13 unique patients; two patients had isolates of different genus/species that tested positive for a single type of carbapenemase. (Table 10)

Of the 13 patients identified with CP-CRE, six (46 percent) were male. Ages of CRE cases ranged from less than one year to 89 years with a median age of 62 years. Eleven of 13 cases (85 percent) had chronic illness; of the two patients without known underlying conditions, both were exposed to international risk factors (country of origin outside of US or known international healthcare exposure). The most common underlying conditions were chronic renal disease (n=7, 54 percent), diabetes mellitus (n=4, 31 percent), and chronic heart disease (n=3, 23 percent). Nine cases (69 percent) had urinary tract infections, two (15 percent) wound infections, one (eight percent) pneumonia, and one (eight percent) had a surgical site infection.

Of the 13 patients with CP-CRE, five had KPC, three had NDM and five had OXA-48 carbapenemase detected. Of the five patients with KPC carbapenemase, one (20 percent) had received healthcare in another US state; the remaining four (80 percent) were not known to have had healthcare outside of Washington. Of the eight patients with NDM and/or OXA-48 carbapenemase, six (75 percent) either were originally from another country or had received international healthcare. Recent international locations of residence or travel noted in histories included Russia, Cameroon, India and Vietnam. These surveillance findings suggest that KPC carbapenemase-producing isolates are circulating in the state and that other types of carbapenemases are more commonly associated with international travel or healthcare.

Carbapenemases in Species other than Enterobacteriaceae

In past years, carbapenemases have been identified in *Acinetobacter* and in *Pseudomonas* isolates. In 2015, DOH identified VIM carbapenemase in a carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) isolate from a patient who had undergone a surgical procedure in Mexico. Nosocomial outbreaks caused by carbapenemase-producing *P. aeruginosa* have been reported in several countries worldwide.

Table 10. Carbapenemase-producing isolates identified in Washington patients, 2015.

Genus and species: **Carbapenemase**	*Enterobacter spp.* n=1	*Escherichia coli* n=6	*Klebsiella spp.* n=8	*Pseudomonas aeruginosa* n=1 (Non-Enterobacteriaceae)
KPC*	1	1	4	0
NDM	0	3	0	0
OXA-48*	0	2	4	0
VIM[+]	0	0	0	1

* There were two patients who had more than one type of bacteria that tested positive for a single carbapenemase.
[+] Not included in case numbers in text body as detected in non-Enterobacteriaceae species.

Ebola

Outbreak 2014-2015

Ebola virus disease is a viral hemorrhagic fever endemic to several areas of Africa. First recognized during an outbreak in 1976, Ebola virus has caused outbreaks in Democratic Republic of Congo (Zaire), and Gabon. In 2013 unrecognized Ebola virus disease cases occurred in Guinea with subsequent spread to other countries in West Africa. The countries most affected have been Guinea, Liberia, and Sierra Leone and through September 2015 there were 28,453 cases and 11,312 deaths reported.

Following the death of a traveler from Ebola virus disease in Dallas in October 2014, travelers from affected countries were screened on entry to the United States. Each arrival was evaluated for risk level based on exposure to ill persons and degree of protective equipment used. Travelers were provided thermometers for temperature monitoring and the appropriate public health agencies were informed of each travelers' ultimate destination. Through the end of monitoring, Washington State received information about 401 travelers from affected countries. Three persons, all low risk travelers, became symptomatic and were tested for Ebola virus disease with negative results.

Public health agencies across the country responded to the challenge of additional demands without additional resources. The participation of local health jurisdictions in Washington was essential in the response to Ebola. Nationally, state and local health jurisdictions monitored over 18,672 persons. The majority of monitoring was done in New York City, Maryland, Pennsylvania, Georgia, and Virginia. No cases of Ebola virus disease have been detected during monitoring.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6425a1.htm?s_cid=mm6425a1_e

FOODBORNE DISEASE OUTBREAKS, 2015

Foodborne disease outbreaks are caused by a variety of agents including viruses, bacteria, toxins and parasites. A foodborne disease outbreak is defined as the occurrence of two or more cases of the same illness resulting from the ingestion of a common food where food is implicated as the source of illness. Outbreaks of foodborne disease are reportable to DOH as outlined in WAC 246-101-510. In Washington, there are typically 25 to 50 outbreaks of foodborne disease reported every year.

In 2015, 36 outbreaks of foodborne disease were reported to DOH (Table 11). Foodborne disease outbreaks are detected through public health surveillance and investigation of cases of notifiable conditions (e.g., bacterial agents such as *Salmonella* and *E. coli*) or by notification from members of the public or food establishments (mainly viral gastroenteritis and bacterial toxin outbreaks).

Table 11. Foodborne Disease Outbreaks, 2007 – 2015

Year	Cases	Outbreaks
2007	722	43
2008	564	46
2009	307	27
2010	344	37
2011	371	30
2012	552	27
2013	437	37
2014	432	45
2015	505	36

Outbreaks occurred in a wide range of settings in 2015. Restaurants were the most frequently reported setting, accounting for approximately two-thirds of outbreaks. Other settings included catered meals, commercially distributed products, markets, and private residences. The agents associated with foodborne disease outbreaks in 2015 are shown in Table 12.

Table 12. Agents Associated with Foodborne Disease Outbreaks, 2015

Agent	**Outbreaks**	**Cases**
Bacterial		
Campylobacter	2	4
Salmonella	8	277
Listeria monocytogenes	0	0
STEC	3	20
Vibrio parahaemolyticus	1	3
Viral		
Confirmed *Norovirus*	3	70
Suspect *Norovirus*	12	105
Toxins		
Bacterial toxin (suspect)	4	17
Scombroid	0	0
Unknown Agent	3	9

Each outbreak of foodborne illness is investigated to determine contributing factors. A contributing

factor is a fault or circumstance that singularly or in combination led to the outbreak of foodborne illness. Contributing factors may include food handling practices which lead to the contamination of a food, and/or the proliferation, amplification or survival of an agent. A single outbreak may have multiple contributing factors identified during an investigation.

In 2015, there were 15 foodborne disease outbreaks confirmed or suspected to be due to *Norovirus*. Typically, outbreaks of *Norovirus* involve factors related to a suspected infectious individual who had contact with food. These factors included evidence of inadequate handwashing practices and/or bare hand contact with ready-to-eat foods.

In 2015, there were 14 bacterial outbreaks. Contributing factors most frequently associated with bacterial outbreaks included cross-contamination of raw and cooked ingredients, and food that was intended to be consumed after a kill step (e.g. heating to kill bacteria) that was inadequate.

Additionally, four outbreaks suspected to be associated with bacterial toxins were reported in 2015. Contributing factors associated with bacterial toxin outbreaks included improper hot holding, insufficient time/temperature during reheating, improper slow cooling and lack of control on time/temperature of the implicated food.

Foodborne outbreaks reported in Washington during 2015 are summarized in Table 13.

Table 13. Foodborne Disease Outbreaks Reported to Washington State Department of Health, 2015

#	Local Health Jurisdiction	Month	Illness Agent	# Confirmed Cases	# Probable Cases	Total # Cases	Exposure Source	Contributing Factors	Setting
1	Pierce	January	Unknown	0	2	2	Beef brisket	Improper cooking	Restaurant
2	King	February	*Salmonella*	5	3	8	Unknown	Unknown	Workplace, not cafeteria
3	King	February	Bacterial toxin	0	3	3	Chicken roll	Unknown	Restaurant
4	King	March	Norovirus	0	3	3	Unknown	Contaminated raw product, cross-contamination, improper hand-washing	Restaurant
5	King	March	Norovirus	0	4	4	Unknown	Bare-hand contact, improper hand-washing	Restaurant
6	Skagit	March	Unknown	0	5	5	Unknown	Improper cooling	Workplace, not cafeteria
7	King	March	Norovirus	0	13	13	Unknown	Bare-hand contact, glove-hand contact by ill food worker	Long term care facility
8	King	March	Norovirus	0	11	11	Unknown	Bare-hand contact, improper hand-washing	Restaurant
9	King	March	*Campylobacter jejuni*	1	1	2	Chicken liver pate	Contaminated raw product, insufficient time/temperature during initial cooking	Restaurant
10	Skagit	April	Norovirus	0	3	3	Unknown	Bare-hand contact, glove-hand contact by food worker suspected to be ill, improper hand-washing	Restaurant
11	Multiple	April	*Salmonella*	192	0	192	Pork	Unknown	Multiple
12	Jefferson	May	Bacterial toxin	0	0	0	Unknown	Improper cold-holding	Picnic/potluck
13	King	May	Norovirus	2	35	37	Unknown	Glove-hand contact by food worker suspected to be ill	School
14	Snohomish	May	Norovirus	0	29	29	Unknown	Glove-hand contact by food worker suspected to be ill	Nursing home, assisted living facility, home care
15	Pierce	May	Norovirus	0	8	8	Unknown	Bare-hand contact, improper hand-washing	Restaurant
16	King	June	*Salmonella*	5	22	27	Unknown	Insufficient time/temperature during initial cooking	Church, temple, religious location
17	Pierce	June	Norovirus	3	8	11	Unknown	Unknown	Banquet facility
18	King	June	*Salmonella*	8	5	13	BBQ chicken, turkey butts/tails	Insufficient time/temperature during initial cooking, cross-contamination	Church, temple, religious location
19	King	June	*Salmonella*	13	9	22	Hollandaise sauce	Contaminated raw product, cross-contamination, improper hot-holding, insufficient time/temperature during initial cooking	Restaurant

Table 13. Foodborne Disease Outbreaks Reported to Washington State Department of Health, 2015

#	Local Health Jurisdiction	Month	Illness Agent	# Confirmed Cases	# Probable Cases	Total # Cases	Exposure Source	Contributing Factors	Setting
20	King	July	*Salmonella*	3	0	3	Unknown	Cross contamination, storage in contaminated environment, Insufficient time/termperature during initial cooking,	Restaurant
21	King	July	*Vibrio parahaemolyticus*	0	3	3	Raw oysters	Prolonged cold storage	Private home
22	King	July	*E. coli* O157	5	0	5	Unknown	Contaminated raw product	Restaurant
23	King	August	*E. coli* O157	12	1	13	Unknown	Contaminated raw product, cross-contamination, storage in contaminated environment, improper hand-washing, improper cold holding	Mobile restaurant
24	Pierce	August	Bacterial Toxin	0	5	5	Cake batter, frozen yogurt	Storage in contaminated environment, prolonged cold storage	Restaurant
25	Clark	August	Norovirus	3	19	22	Unknown	Unknown	Restaurant
26	Pierce	August	Bacterial Toxin	0	3	3	Teriyaki chicken and rice	No attempt to control temperature of implicated food	Restaurant
27	King	August	*E. coli* O121	2	0	2	Private home, workplace, not cafeteria	Contaminated raw product	Grocery store
28	King	September	*Salmonella*	2	0	2	Unknown	Contaminated raw product, cross-contamination, storage in contaminated environment, improper cold-holding	Restaurant
29	Clark	September	Unknown	0	0	0	Unknown	Unknown	Restaurant
30	Clark	October	Norovirus	0	8	8	Unknown	Improper hand-washing	Restaurant
31	Grant	November	*Salmonella*	4	6	10	Turkey	Contaminated raw product, cross-contamination, bare-hand contact by food worker suspected to be ill, improper hot holding,	Workplace, not cafeteria
32	King	November	Norovirus	0	10	10	Unknown	Bare-hand contact by food worker suspected to be ill, glove-hand contact by food worker suspected to be ill	Restaurant
33	Skagit	December	Norovirus	0	10	10	Unknown	Bare-hand contact, improper hand-washing	Restaurant
34	King	December	Norovirus	0	2	2	Unknown	Glove-hand contact by food worker suspected to be ill	Dorm cafeteria
35	King	December	*Campylobacter*	1	1	2	Foie gras	Improper cooling	Restaurant
36	Clark	December	Norovirus	0	4	4	Unknown	Bare-hand contact, improper hand-washing	Restaurant

INFLUENZA SURVEILLANCE, 2015–2016

The Department of Health (DOH), in collaboration with local health jurisdictions and Centers for Disease Control and Prevention (CDC), performed surveillance for influenza during the 2015 to 2016 season using several different systems. This report summarizes data collected from July 26, 2015 to July 23, 2016 (week 30 of 2015 through week 29 of 2016) through key systems.

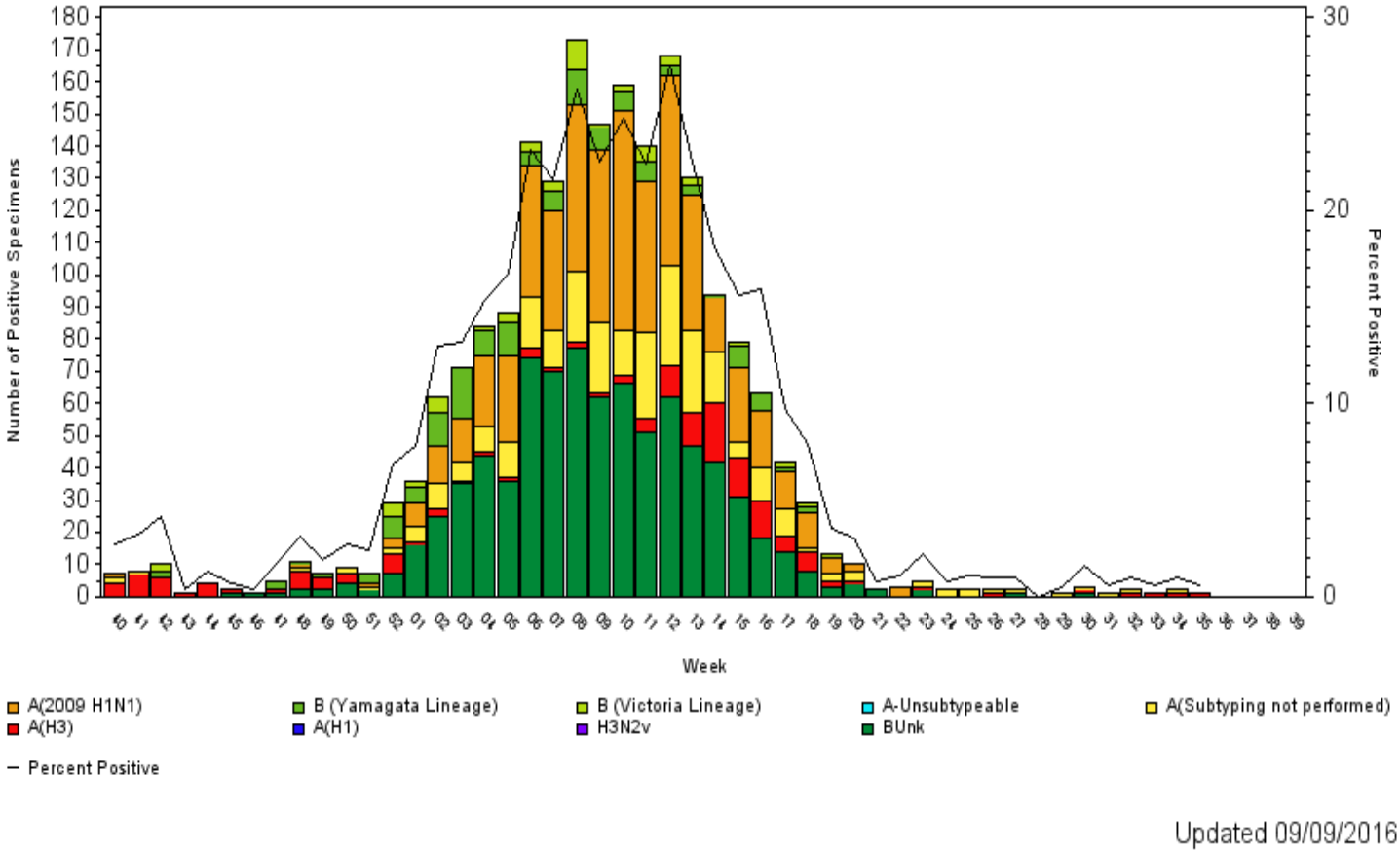
Overall Summary

Nationally, influenza activity remained low from October 2015 until late December 2015 and peaked in mid-March 2016. Compared with recent previous seasons (2012-13, 2013-14, 2014-15), this was a moderate season with lower activity and a later peak. Nationally, influenza A (2009 H1N1) viruses predominated overall, but influenza A(H3N2) viruses were more commonly identified from October through December, and influenza B viruses were more commonly identified from mid-April through mid-May.

World Health Organization/National Respiratory and Enteric Virus Surveillance System (WHO/NREVSS)

Seven laboratories in Washington participate in the WHO/NREVSS surveillance network, along with other laboratories nationwide that test Washington residents for influenza. WHO/NREVSS laboratory data for WA residents are shown in the following figure.

Figure 1. Influenza positive tests reported to CDC by WHO/NREVSS collaborating laboratories, Washington, 2015-2016



Antigenic Characterization

Antigenic characterization has been conducted by CDC on a subset of influenza specimens collected in Washington during the 2015-2016 season, as described below.

Fifteen influenza A (H3N2) specimens were characterized as A/Switzerland/9715293/2013-like, the influenza A (H3N2) component of the 2015-2016 vaccine. Two influenza A (H3N2) specimens were characterized as A/Hong Kong/4801/2014-like, the influenza A (H3N2) component of the 2016-2017 Northern Hemisphere vaccine.

Twenty-three influenza A (2009 H1N1) specimens were characterized as A/California/07/2009-like, the influenza A (H1N1) component of the 2015-2016 vaccine.

Thirty-three influenza B specimens were characterized as B/Phuket/3073/2013-like, the B Yamagata lineage component of the 2015-2016 trivalent and quadrivalent vaccines.

Fifteen influenza B specimens were characterized as B/Brisbane/60/2008-like, the B Victoria lineage component of the 2015-2016 quadrivalent influenza vaccine.

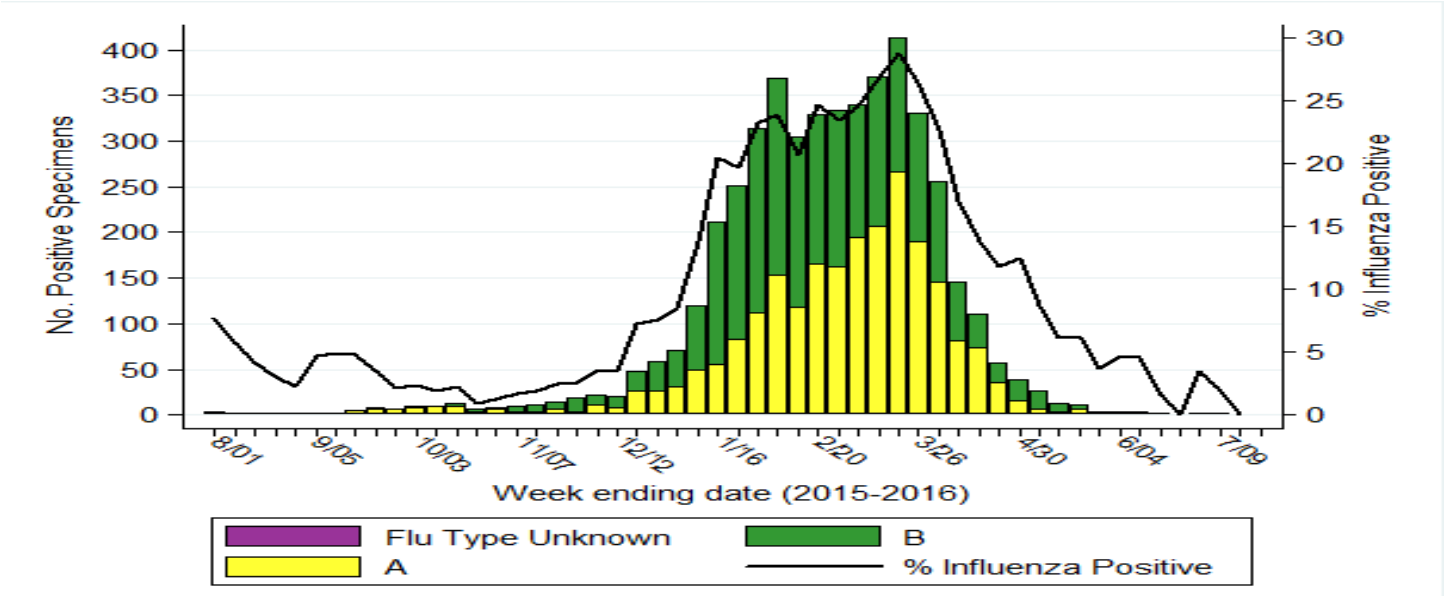
Antiviral Resistance Testing and Novel Influenza A Viruses

Forty-four influenza A (H1N1) isolates collected in Washington during the 2015-2016 season had antiviral resistance testing performed at CDC, with one isolate resistant to oseltamivir and peramivir. Forty-four influenza A(H3N2) isolates and 94 influenza B isolates had antiviral resistance testing performed at CDC, with none found to be resistant. Nationally, less than one percent of influenza viruses tested have resistance to antivirals.

Public Health Reporting of Aggregate Influenza Data (PHRAID)

Select commercial laboratories in Washington report the number of influenza tests performed and the number positive for influenza A and B each week through PHRAID (Figure 2).

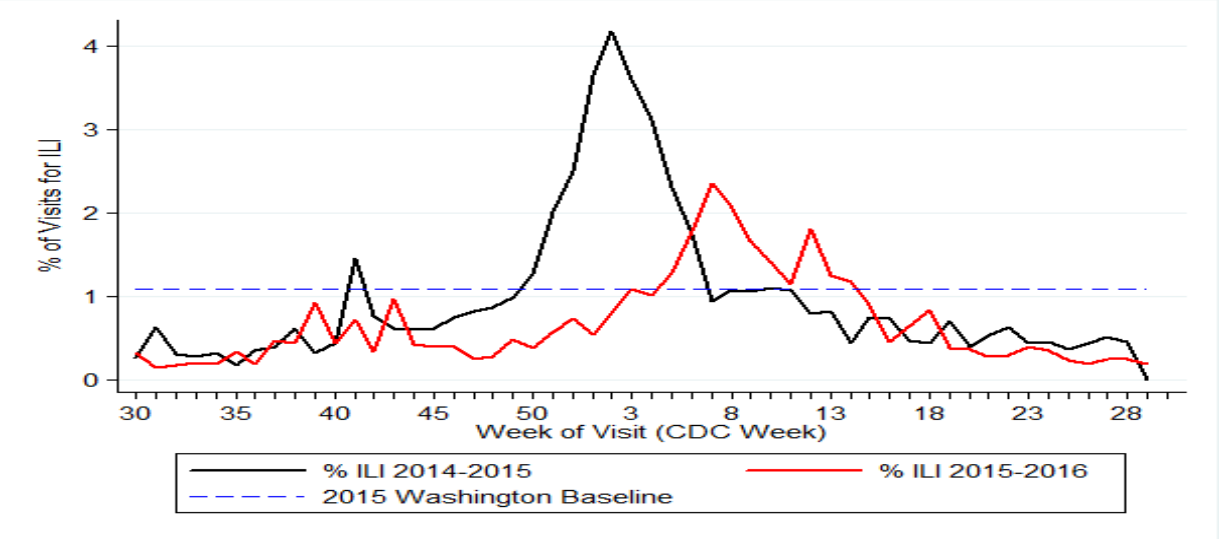
Figure 2. Aggregate Influenza Testing Results, Western Washington, 2015–2016



Outpatient Influenza-like Illness Surveillance Network (ILINet) Data

Information on patient visits to health care providers for influenza-like illness is collected through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet). Each week, up to 35 outpatient healthcare providers in Washington reported data to CDC on the total number of patients seen and the number of those patients with influenza-like illness (ILI) by age group.

Figure 3. Percentage of ILI Visits Reported by Sentinel Providers, Washington, 2014–2016

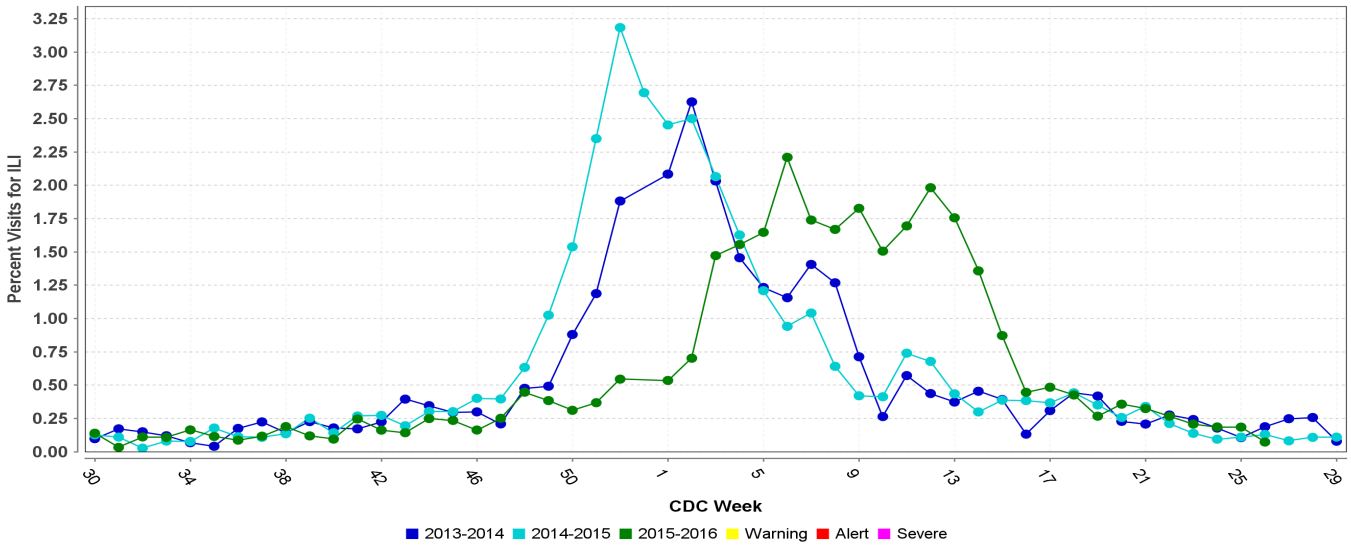


ESSENCE Syndromic Surveillance Data

Figure 4 shows the proportion of visits at a sample of emergency departments in western Washington for a chief complaint of influenza-like illness, or discharge diagnosis of influenza, by CDC week. For this purpose, ILI is defined as "influenza" OR fever with cough or fever with sore throat. Syndromic Surveillance ILI data are not available for eastern Washington facilities.

For more information about Syndromic Surveillance in Washington state, see http://www.doh.wa.gov/ForPublicHealthandHealthcareProviders/HealthcareProfessionsandFacilities/DataReportingandRetrieval/ElectronicHealthRecordsMeaningfulUse/SyndromicSurveillance.

Figure 4: Syndromic Surveillance, Percentage of Hospital Visits for a Chief Complaint of ILI, or Discharge Diagnosis of Influenza, by CDC Week, Western Washington, 2013-2016



Reported Laboratory-Confirmed Influenza-Associated Deaths

Sixty-eight laboratory-confirmed influenza deaths were reported from week 30 of 2-15 through week 29 of 2016, including one pediatric death. Forty-two deaths were attributable to influenza A, twenty-five to influenza B and one to co-infection of influenza A and B.

Table 14: Number and rate of reported laboratory-confirmed influenza-

Age Group (in years)	Number of Deaths	Death Rate (per 100,000 population)
0–4	0	0
5–24	1	0.06
25–49	12	0.52
50–64	19	1.37
65+	36	3.84
Total	68	0.99

Reported Laboratory-Confirmed Influenza-Associated Deaths, Past Seasons

For reference, lab-confirmed influenza death totals reported to DOH for past seasons are presented below in Table 15. Note that for the purposes of tables 14 and 15, each influenza season runs from week 30 of one year to week 29 of the next (roughly July to July).
Past season summaries are available:

http://www.doh.wa.gov/DataandStatisticalReports/DiseasesandChronicConditions/CommunicableDiseaseSurveillanceData/InfluenzaSurveillanceData

Note that influenza deaths are likely under-reported. The reasons for this under-reporting vary. Influenza may not be listed as a cause of death, influenza testing may not have occurred in a timely fashion to identify the virus, or may not have been performed at all, and lab-confirmed influenza deaths may not have been appropriately reported to public health.

CDC has published information about estimating seasonal influenza-associated deaths:

http://www.cdc.gov/flu/about/disease/us_flu-related_deaths.htm?mobile=nocontent

Table 15: Number and rate of reported laboratory-confirmed influenza-associated deaths by age group, past season totals

Season	Number of Deaths, All Ages	Death Rate (per 100,000 population), All Ages
2015-2016, total	68	0.99
2014-2015, total	157	2.28
2012-2013, total	54	0.80
2011-2012, total	18	0.27
2010-2011, total	36	0.53

APPENDIX III

State Demographics

Washington State Population Estimates, 1985-2015

Washington State Office of Financial Management

Year	Estimate
1985	4,415,785
1986	4,462,212
1987	4,527,098
1988	4,616,886
1989	4,728,077
1990	4,866,692
1991	5,021,335
1992	5,141,177
1993	5,265,688
1994	5,364,338
1995	5,470,104
1996	5,567,764
1997	5,663,763
1998	5,750,033
1999	5,830,835
2000	5,894,143
2001	5,970,330
2002	6,059,316
2003	6,126,885
2004	6,208,515
2005	6,298,816
2006	6,420,258
2007	6,525,086
2008	6,608,245
2009	6,672,159
2010	6,724,540
2011	6,767,900
2012	6,817,770
2013	6,882,400
2014	6,968,170
2015	7,061,410

*State of Washington Office of Financial Management April 1, 2016 Population Trends. Accessed 7/20/16 from http://www.ofm.wa.gov/pop/april1/poptrends.pdf

Washington State Population Estimates By County, 2015*

Washington State Office of Financial Management

County	Estimate
Adams	19,410
Asotin	22,010
Benton	188,590
Chelan	75,030
Clallam	72,650
Clark	451,820
Columbia	4,090
Cowlitz	104,280
Douglas	39,990
Ferry	7,710
Franklin	87,150
Garfield	2,260
Grant	93,930
Grays Harbor	73,110
Island	80,600
Jefferson	30,880
King	2,052,800
Kitsap	258,200
Kittitas	42,670
Klickitat	21,000
Lewis	76,660
Lincoln	10,720
Mason	62,200
Okanogan	41,860
Pacific	21,210
Pend Oreille	13,240
Pierce	830,120
San Juan	16,180
Skagit	120,620
Skamania	11,430
Snohomish	757,600
Spokane	488,310
Stevens	44,030
Thurston	267,410
Wahkiakum	3,980
Walla Walla	60,650
Whatcom	209,790
Whitman	47,250
Yakima	249,970
Washington State	7,061,410

*State of Washington Office of Financial Management April 1, 2016 Population Data Table. Accessed 7/20/16 from http://www.ofm.wa.gov/pop/asr/default.asp

Washington State Population By Age and Sex, 2015*

Washington State Office of Financial Management

Age (years)	Male	Female	TOTAL
0-4	225,246	215,085	440,331
5-9	231,973	221,216	453,189
10-14	225,181	215,291	440,472
15-19	229,781	218,493	448,274
20-24	246,839	234,295	481,134
25-29	247,751	233,973	481,724
30-34	252,533	243,379	495,912
35-39	233,682	227,766	461,448
40-44	228,357	223,864	452,221
45-49	232,433	227,906	460,339
50-54	244,025	245,773	489,798
55-59	240,647	246,982	487,629
60-64	213,358	227,917	441,275
65-69	176,608	189,834	366,442
70-74	119,911	131,388	251,299
75-79	76,698	88,427	165,125
80-84	50,397	65,085	115,482
85 +	46,493	82,823	129,316
TOTAL	3,521,913	3,539,497	7,061,410

*State of Washington Office of Financial Management April 1, 2016 Population Data Table. Accessed 7/20/16 from http://www.ofm.wa.gov/pop/asr/default.asp