REPORTABLE INFECTIOUS DISEASES IN ALASKA

2009–2013 Summary

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*Acknowledgements: Data (2008-2012) originally compiled by Maggie Grinnell; in 2014, updated by Thomas Frasene, Alaska Section of Epidemiology.*
INTRODUCTION

Purpose
The purpose of this report is to provide trend information for select reportable diseases in the State of Alaska between 2009 and 2013.

Infectious Disease Surveillance in Alaska
The Alaska Division of Public Health, Section of Epidemiology’s (SOE) ability to detect and investigate infectious disease outbreaks depends on robust, consistent, and timely reporting by healthcare providers. Information on how providers and laboratories can report to SOE, as well as a complete list of diseases mandated by regulation to be reported to Alaska public health authorities, can be found at: http://www.epi.alaska.gov/pubs/conditions.

Select Reportable Disease Summaries
Diseases were selected for inclusion in this report based on their public health significance and frequency of occurrence. Case definitions from the Centers for Disease Control and Prevention (CDC) are available at: http://wwwn.cdc.gov/nndss/script/casedefDefault.aspx.

Cases without a known onset date are attributed to the date of specimen collection, diagnosis, or report to SOE, whichever was earliest. National reporting standards assign cases to the patient’s state of residence, meaning that some diseases reported to SOE may have actually been acquired outside of Alaska.

Technical Notes
This document is best viewed electronically. Items with purple font are embedded with links which will take you to appropriate content within this document or on the internet. Clicking the names of the diseases in the Table of Contents above will take you to the relevant page within this document. Clicking the Return to Table of Contents link at the bottom of each page in this document will take you back to the Table of Contents. Clicking the disease names on their respective pages below will take you to relevant SOE webpage. Alternatively, relevant SOE webpages may be found by navigating to http://www.epi.alaska.gov.

Infectious Disease Reports
The annual summary Bulletin of reportable conditions for 2012 and 2013, with disease counts and regional information, can be found here. The 2008–2012 edition of Reportable Infectious Diseases in Alaska can be found here.
From 2009 to 2013, 23 cases of botulism were reported to SOE, 22 of which were foodborne (Figure 1). Six cases of botulism poisoning, representing four outbreaks, were reported in 2013. The age range of patients with botulism poisoning was 27–85 years (median age: 67 years); four (67%) were female. All six ill persons were hospitalized.

All 22 cases of foodborne botulism in the five year period were associated with eating traditional Alaska Native foods. Foods identified as sources for these outbreaks included aged fish, fish heads, beaver tail, and seal and fish oil. One case of infant botulism was reported in 2009, accounting for the first use of BabyBIG® in Alaska.¹

Healthcare providers should be aware of the possibility of botulism poisoning among patients presenting with gastrointestinal symptoms, a recent history of eating fermented foods, and symmetrical, descending CNS paralysis. Expert medical consultation from SOE is available 24 hours per day, year round, along with rapid provision of botulism antitoxin. In April 2013, antitoxin product switched from an investigational product to a product licensed by the FDA (BAT™). The Botulism in Alaska monograph, a guide to diagnosis and treatment of botulism for physicians and healthcare providers, is available online.²

### Figure 1. Reports of Botulism by Year — Alaska, 2009–2013

![Botulism Cases by Year](Image)

**References**


CAMPYLOBACTERIOSIS

Alaska averaged about 105 cases of *Campylobacter* infection each year from 2009 to 2013 (Figure 2). The average annual number of cases of campylobacteriosis has increased roughly 50% when compared to data from 1998 to 2007, when the average number of cases was about 70 cases per year.\(^1\) Reported cases of campylobacteriosis have shown an increase during the summer months (Figure 3). While most cases of campylobacteriosis in the United States are sporadic, 50 of the 107 cases in 2013 were recognized as part of an outbreak. There were five *Campylobacter* outbreaks in 2013, and the largest of these infected 31 people and was associated with raw milk consumption.\(^2\) Another *Campylobacter* outbreak linked to raw milk occurred in 2011, infecting 18 individuals.\(^3\)

**Figure 2.** Reports of Campylobacter Infections by Year — Alaska, 2009–2013

![Figure 2](image1)

**Figure 3.** Reports of Campylobacter Infections by Onset Month — Alaska, 2009–2013

![Figure 3](image2)

**References**


CHLAMYDIA

In 2013, 5,793 cases of chlamydia infection (CT) were reported to SOE; Alaska’s CT incidence rate was 787 cases per 100,000 persons. After 2 years of declining rates, this represents a 5% increase in rates compared to 2012 data.\(^1\) Alaska has ranked first or second for national CT rates since 2000.

**Figure 4.** Reports of Chlamydial Infections by Year — Alaska, 2009–2013

**Figure 5.** Reports of Chlamydial Infections by Onset Month — Alaska, 2013

**Reference**

GIARDIASIS

Alaska averaged about 98 cases of giardiasis from 2009 to 2013 (Figure 6). *Giardia* is a well-known inhabitant of Alaska’s surface waters. Cases of *Giardia* have shown an increase during the summer months and the fall hunting season (Figure 7). Most cases occur sporadically with no source identified. However, during the summer of 2012, one major outbreak of giardiasis was identified and investigated. Reports were received for 21 ill patients, and the source was determined to be contaminated spring water. There were no outbreaks of giardiasis reported in 2013.

**Figure 6.** Reports of Giardia Infections by Year — Alaska, 2009–2013

![Figure 6](image)

**Figure 7.** Reports of Giardia Infections by Onset Month — Alaska, 2009–2013

![Figure 7](image)
GONORRHEA

In 2013, 1,137 cases of gonococcal infection (GC) were reported to SOE; Alaska’s GC incidence rate was 154 cases per 100,000 persons. After 2 years of declining rates, this represents a 54% increase in case rates compared to 2012 data.¹

Figure 8. Reports of Gonococcal Infections by Year — Alaska, 2009–2013

Figure 9. Reports of Gonococcal Infections by Onset Month — Alaska, 2013

Reference

SOE received 113 reports of invasive *Haemophilus influenzae* cases from 2009 to 2013. In 2013, 21 cases of *H. influenzae* were reported to SOE (Figure 10). Of these 21 cases, five (24%) were type a, two (10%) were type b, four (19%) were type f, and 10 (48%) were nontypeable. The five cases of *H. influenzae* type a all came from the Yukon-Kuskokwim Delta, the region that has seen the most of *H. influenzae* from 2002 to 2013. Both of the patients with *H. influenzae* type b (Hib) were aged less than 1 year. Four cases of Hib were reported in children aged less than 10 years from Southwestern Alaska in 2009.

SOE works closely with the CDC’s Arctic Investigations Program (AIP) on *H. influenzae* investigations. In addition to providing support for infectious disease research projects, AIP assists in investigations and performs laboratory testing for various invasive disease-causing bacteria such as *H. influenzae*.

**Figure 10.** Reports of *Haemophilus influenzae* Invasive Disease by Year — Alaska, 2009–2013

**References**

HEPATITIS C

From 2009 to 2013, SOE received an average of 857 reports annually of hepatitis C virus (HCV) infection. In 2013, 943 new reports of HCV infection were received (Figure 11). It is important to note that these data represent newly reported cases of either acute cases or chronic cases. Rates of HCV reports were highest in the Anchorage/Mat-Su, Gulf Coast, and Southeast regions (Figure 12). Males comprised 54% of reported cases from 2009 to 2013. An HCV update is available online, which summarizes reports of HCV from 2003 to 2012 in Alaska.¹

**Figure 11.** Reports of HCV by Year — Alaska, 2009–2013

![Figure 11](image1)

**Figure 12.** Rates of HCV Reports by Region — Alaska 2013

![Figure 12](image2)

**Reference**

HIV

From January 1, 1982 through December 31, 2013, 1,540 cases of human immunodeficiency virus (HIV) infection were reported to SOE. Of the 1,540 reported cases, 555 (36%) were in persons who are known to have subsequently died. Of the 985 HIV-infected persons who are not known to have died, 574 (58%) are currently living in Alaska.

During 2013, 59 cases of HIV infection were reported to SOE; one of these cases was in a person who is known to have died as of December 31, 2013. Of the 59 reported cases, 24 (41%) were initially diagnosed in Alaska, yielding a statewide incidence rate in 2013 of 3.3 cases per 100,000 persons. In contrast to previous years, incident cases of HIV infection in 2013 were most prevalent in non-white persons (representing 67% of new diagnoses). Of the 21 newly diagnosed persons who agreed to be interviewed, 15 (71%) reported that drug or alcohol use contributed to their high-risk behavior. Of the 11 men who were identified as men who have sex with men (MSM) and agreed to be interviewed, 10 (91%) reported online sex-seeking behaviors and four (36%) were co-infected with chlamydia, gonorrhea, or syphilis at the time of their HIV diagnosis.

The number of new HIV infections reported to SOE varies from year to year as Alaska is a low incidence jurisdiction. The most common risk factor is MSM which represents over half of new infections each year (Figure 13).

Figure 13. HIV Cases by Year — Alaska, 2009–2013

Reference
PARALYTIC SHELLFISH POISONING

From 2009 to 2013, 44 cases of paralytic shellfish poisoning (PSP) were reported to SOE (Figure 14). During this time, the age range of patients with PSP was 13–72 years (median age: 54 years); 25 (58%) were male. All ill persons consumed self-harvested shellfish from Southeast Alaska or Kodiak Island. Shellfish consumed included cockles, mussels, Dungeness crab viscera, and several types of clams (Figure 15). During 2011, a large outbreak accounting for 21 of the 26 cases from 2011 was identified in Metlakatla and Ketchikan that resulted in four hospitalizations. Two ill persons diagnosed with PSP in 2010 died. Five cases from four outbreaks were reported in 2013.

The State of Alaska does not monitor or certify any beaches for toxins associated with PSP for the purposes of recreationally harvested shellfish, and the consumption of recreationally harvested shellfish cannot be considered 100% safe. A PSP factsheet is available online.

Figure 14. Reports of PSP by Year — Alaska, 2009–2013

![Graph showing number of cases by year]

Figure 15. Shellfish Consumed by PSP Confirmed Cases — Alaska, 2009–2013*

![Pie chart showing shellfish consumed]

*N=49 due to some cases eating multiple types of shellfish

References
PERTUSSIS

An outbreak of pertussis that began in 2012 accounted for significant increases in cases reported in 2012 and 2013.\(^1\) While an outbreak in Juneau in 2008 accounted for 111 pertussis reports, the 2012–2013 outbreak accounted for more reports and had a broader geographic range.\(^2\) During 2013, 308 cases of pertussis were reported to SOE, yielding an incidence of 41.8 cases per 100,000 persons (Figure 16). Cases reported increased significantly beginning in July 2012 and remained elevated throughout much of 2013 (Figure 17).\(^2\) Other states reported increased levels of reported pertussis during this same time period.\(^3\)

**Figure 16.** Reports of Pertussis by Year — Alaska, 2009–2013

![Figure 16](image1)

**Figure 17.** Reports of Pertussis Cases by Month — Alaska, 2012–2013

![Figure 17](image2)

**References**

There were seven cases of animal rabies confirmed at Alaska State Virology Lab (ASVL) in 2013 (Figure 18). The priorities for testing at ASVL have been animals for which there are public health actions associated, such as to determine whether an exposed human would need administration of rabies post-exposure prophylaxis (PEP), or appropriate follow-up for another animal exposed to the suspected rabid one. In March 2011, CDC trained staff from the Alaska Department of Fish and Game (ADF&G), the University of Alaska Fairbanks (UAF), and the USDA Wildlife Services (USDA-WS) in field screening direct rapid immunohistochemical test (DRIT) methods. In the first year of the program, 2011, the number of animals evaluated by DRIT was ~350, compared to the ~30 evaluated by ASVL. All animals tested positive by DRIT must be confirmed by DFA (direct fluorescent antibody) at CDC. In 2012, ADF&G reported on a wolverine that was determined to be positive for rabies via DRIT and via DFA at CDC. This was an animal that was found dead by biologists and was the first known wolverine to test positive not only in Alaska, but in the nation.¹

Of note in 2013, two wolves from the Chandalar Lakes region tested positive for rabies. The first was tested at ASVL as a human exposure had been reported. This wolf was trapped in a region south of the Brooks Range where rabies activity had not been documented for over 60 years. The second was submitted as part of enhanced surveillance efforts requested by ADF&G following results from the first wolf. The second samples initially tested positive via DRIT and then were confirmed at ASVL.²

Figure 18. Cases of Animal Rabies Documented by ASVL — Alaska, 2009–2013

References
Most cases of salmonellosis reported from 2009 to 2012 were sporadic with no identified source. However, 64 of the 84 cases reported to SOE in 2013 were linked to seven outbreaks (Figure 19). One outbreak accounted for 39 cases. Eleven of 59 cases in 2012 were part of an *S. enteritidis* Heidelberg outbreak linked to poultry from a single producer that sickened over 120 people in 13 states.¹

Alaska cases that were linked to national outbreaks were identified though pulsed-field gel electrophoresis (PFGE) at the Alaska State Public Health Laboratory (ASPHL).²

**Figure 19.** Reports of *Salmonella* Infections by Year — Alaska, 2009–2013

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**References**


SYPHILIS

In 2013, 32 cases of early (primary, secondary, and early latent) and congenital syphilis were reported to SOE for an incidence rate of 4.4 cases per 100,000 persons. This represents a 60% increase in cases over the 20 cases reported in 2012. Not seen for 34 years in Alaska, this outbreak has resulted in two congenital syphilis (CS) cases, one in 2012 and one in 2013. The 2013 CS case resulted in stillbirth.

Figure 20. Reports of Early Syphilis Infections by Year — Alaska, 2009–2013

Figure 21. Primary, Secondary, and Early Latent Syphilis Cases by Risk Factor — Alaska, 2009–2013

Reference
TUBERCULOSIS

In 2013, 71 cases of tuberculosis (TB) were reported to the Alaska Tuberculosis Control Program (Figure 22) for a rate of 9.6 cases per 100,000. This was the highest rate in the United States, well above the nationwide rate of 3.0 cases per 100,000. The Southwest and Northern Regions of Alaska traditionally have the highest rates of TB, and Alaska Natives and Asians/Pacific Islanders bear a disproportionate burden of TB in Alaska (Figure 23). In 2013, one village-based outbreak from the Southwest Region accounted for 17 cases of TB with a corresponding incidence rate of ~2,000/100,000. A detailed 2013 annual TB report can be found on the Alaska Tuberculosis Control Program website.

Figure 22. Report of Tuberculosis by Year — Alaska, 2009–2013

![Graph showing the number of TB cases by year from 2009 to 2013.]

Figure 23. Racial Demographics of TB Cases Compared to 2012 Population — Alaska, 2009–2013

![Bar chart showing the percentage of TB cases and population by race.]

References

1. CDC. Trends in Tuberculosis — United States, 2013. MMWR 2014;63(11);229–33. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6311a2.htm

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VARICELLA

Alaska averaged 58 cases of varicella annually from 2009 to 2013 (Figure 24). A spike in varicella cases occurred in the fall of 2012 in Kenai communities with low vaccination rates. A Public Health Advisory was published and an investigation was completed.¹ Twelve cases were confirmed among school-age children attending four schools in Homer.

Figure 24. Reports of Varicella — Alaska, 2009–2013

Reference