

*State of Alaska  
Epidemiology*



# **Bulletin**

**Recommendations  
and  
Reports**

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## **2007 Annual Infectious Disease Report (January–December)**

## Introduction

The Alaska Division of Public Health's ability to detect and investigate infectious disease outbreaks depends on robust, consistent and timely reporting by health care providers. The infectious diseases that are legally reportable in Alaska are listed in the current reporting manual, *Conditions Reportable to Public Health*, which is accessible online.<sup>1</sup> As well as the regional distribution of diseases typically provided in the Annual Infectious Disease Report, this *Recommendations and Reports* provides additional epidemiologic data regarding selected reportable infectious diseases.

## Newly Reportable Diseases

In 2007, several diseases were added to the reportable conditions list to enable the Section of Epidemiology (SOE) to more effectively address Alaska's current public health needs (Box).<sup>2</sup> Because of concerns of possible bioterrorism, smallpox was added back to the list along with several other possible agents of bioterrorism. Some conditions, such as amebiasis and Reye syndrome were removed from the list. A summary of the revisions is accessible online.<sup>2</sup>

### Box. New Infectious Diseases Reportable to Public Health

Chancroid	Group A Strep invasive disease
<b>Hemorrhagic fever</b>	Group B Strep invasive disease
Listeriosis	Pneumococcal invasive disease
Prion diseases	<i>Vibrio</i> infections, including cholera
Q fever	Varicella (chicken pox)
<b>SARS</b>	West Nile virus infection
<b>Smallpox</b>	

**Public health emergencies are in bold.**

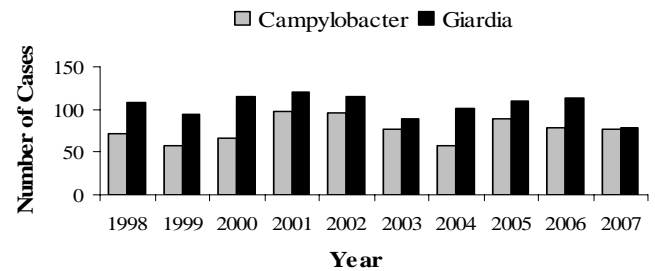
## Electronic Laboratory Reporting

Since 2002, SOE has been working with hospital and reference laboratories to develop electronic laboratory reporting (ELR). Currently, eight labs, including three out-of-state labs, report through various secure electronic mechanisms. Facilities interested in learning more about electronic laboratory reporting should call 907-269-8000.

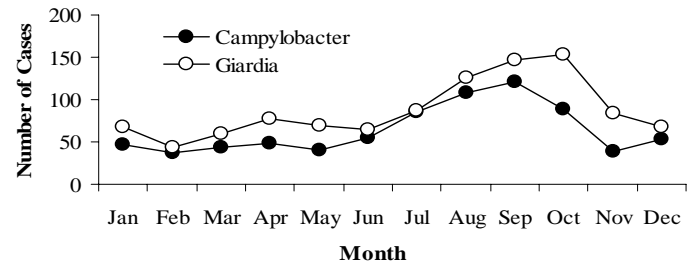
## Campylobacter and Giardia

Alaska averages about 70 cases of campylobacter and 100 cases of giardia each year (Figures 1 and 2). Most cases occur sporadically with no source identified. Cases of each disease rise during the summer months. Giardia is a well known inhabitant of surface waters in Alaska, and increased cases are also noted during the fall hunting season. No major clusters of either disease were identified in 2007 and an analysis of pulsed-field gel electrophoresis (PFGE) patterns of 28 campylobacter isolates in 2007 verified that no large clusters occurred.

**Figure 1.** Campylobacter and Giardia in Alaska, 1998–2007



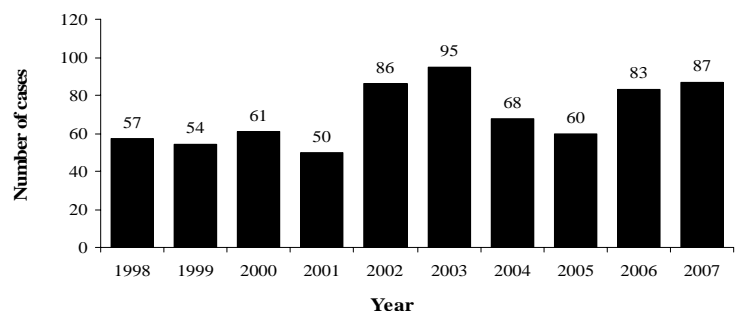
**Figure 2.** Campylobacter and Giardia in Alaska by Onset Month, 1998–2007



## Salmonella

Eighty-seven cases of salmonella were identified in Alaska during 2007 (Figure 3). The three most common serotypes identified were: Typhimurium (22 cases), Enteritidis (17 cases), and monophasic (9 cases). Most cases of salmonella were sporadic with no identified source. However, six cases were linked to national outbreaks: one to peanut butter contaminated with *Salmonella* serotype Tennessee that sickened over 700 cases nationwide, and five cases were linked to a commercial pot pie contaminated with *Salmonella* that sickened over 270 people nationwide. Alaska cases that were linked to national outbreaks were identified through pulsed-field electrophoresis (PFGE) at the Alaska State Public Health Lab (ASPHL). PFGE has become a powerful tool to link cases to each other and to their source. In addition to salmonella, ASPHL currently conducts PFGE on isolates of campylobacter, *Escherichia coli* O157:H7, listeria, and shigella.

**Figure 3.** Salmonella in Alaska, 1998–2007

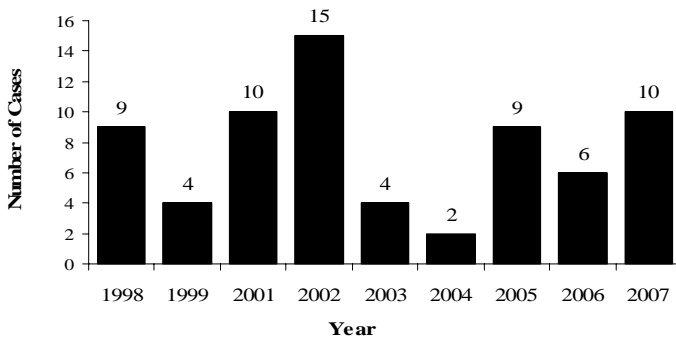


## Botulism

From 1998–2007, 69 cases of foodborne botulism were reported to SOE (Figure 4). Ten cases of botulism poisoning, representing seven outbreaks, were reported in 2007. Three of the outbreaks included two cases each. The age range of patients with botulism poisoning was 18–70 years (median age: 52 years); seven (70%) were female. All cases of botulism were associated with eating traditionally prepared Alaska Native foods. Foods identified as sources for these outbreaks included fermented beluga, fermented beaver tail, fermented seal flipper, seal blubber, whale blubber, and fermented fish heads. One person died.

Expert medical consultation from SOE is available 24-hours a day, year round, along with rapid provision of botulism antitoxin. Health care providers should be aware of the possibility of botulism poisoning among patients presenting with gastrointestinal symptoms, symmetrical, descending CNS paralysis, and a recent history of eating fermented foods. A guide to diagnosis and treatment of botulism for physicians and health care providers is available online.<sup>3</sup>

**Figure 4.** Botulism in Alaska, 1998–2007

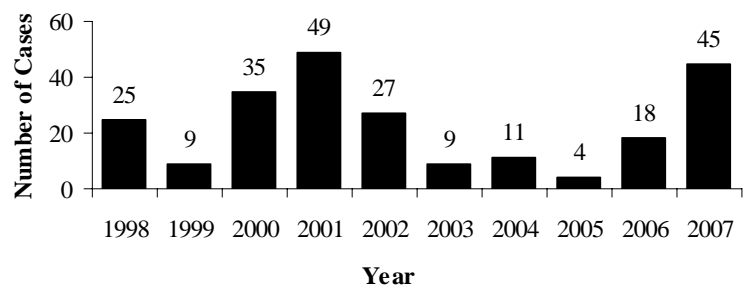


## Animal Rabies

From 1998–2007, there were 232 cases of animal rabies in Alaska (Figure 5). In 2007, the Alaska State Virology Laboratory (ASVL) confirmed rabies in 45 of 104 animals submitted. Positive animals included 24 red foxes, 17 arctic foxes, three dogs and one wolf. Cases of animal rabies are documented every year in Alaska, with epizootic (epidemic in animals) peaks occurring every few years. These peaks reflect the ecology and population cycles of the wildlife reservoirs (i.e., foxes and their food sources, small rodents). The northern and western coastal areas of Alaska are considered enzootic (i.e., the disease is always present) for animal rabies; most of the rest of Alaska has never had a confirmed case (Figure 6).

One of the rabid dogs identified in 2007 was imported from India via Seattle, Washington to Juneau. This young puppy died of rabies within 2 days of entering Alaska. Molecular sequencing of the rabies virus isolate indicated similarity to virus variants found in northern India. Public health officials only became aware of this puppy when contacted by veterinarians who were concerned about the nature of the puppy's death. The veterinarian's call mobilized the Sections of Epidemiology, Laboratories and Nursing to obtain the animal, test it for rabies, and deliver rabies post-exposure prophylaxis to exposed Alaskans.<sup>4</sup>

**Figure 5.** Animal Rabies Cases in Alaska, 1998–2007



**Figure 6.** Alaska Regions Enzootic for Fox Rabies\*



\*Enzootic areas are highlighted in black.

## 2007 Annual (January – December) Infectious Disease Report Number of Cases by Region

Disease Name	Southwest		Northern		Interior		Anch/Mat-Su		Gulf Coast		Southeast		Total	
	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007	2006	2007
AIDS*	0	2	2	0	2	3	12	10	2	0	0	0	46	30
Anthrax	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Botulism	6	9	0	1	0	0	0	0	0	0	0	0	6	10
Campylobacteriosis	3	2	1	0	9	10	46	45	15	12	4	7	78	76
Chicken Pox**	NN	6	NN	3	NN	11	NN	16	NN	1	NN	6	NN	43
<i>Chlamydia trachomatis</i> infection	645	644	400	495	526	733	2494	2547	197	207	266	285	4528	4911
Cryptosporidiosis	0	1	0	0	0	1	0	0	0	0	4	2	4	4
Echinococcosis	0	0	0	0	0	0	0	1	0	0	0	0	0	1
<i>Escherichia coli</i> O157:H7 infection	0	0	0	0	1	1	4	3	1	0	2	1	8	5
GAS invasive disease**	NN	0	NN	1	NN	6	NN	12	NN	3	NN	3	NN	25
GBS invasive disease**	NN	1	NN	2	NN	8	NN	21	NN	0	NN	2	NN	34
Giardiasis	3	5	1	4	13	11	39	38	20	10	37	11	113	79
Gonorrhea	61	46	54	74	42	37	448	405	17	8	8	11	630	581
<i>Haemophilus influenzae</i> invasive disease	7	2	0	1	2	1	6	90	0	1	1	1	16	15
Hepatitis A	0	0	0	0	0	1	1	3	0	0	1	1	2	5
Hepatitis B	0	0	0	0	0	1	6	6	2	0	1	2	9	9
Hepatitis C***	30	36	22	14	139	126	704	626	207	183	72	156	1174	1141
HIV infection (includes AIDS cases above)*	1	5	5	0	6	5	39	26	3	0	0	3	88	61
Legionellosis	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Leprosy (Hansen disease)	0	0	0	0	0	0	1	1	0	0	0	0	1	1
Listeriosis**	NN	0	NN	0	NN	0	NN	1	NN	0	NN	1	NN	2
Lyme Disease	0	2	0	0	0	0	1	7	1	1	1	0	3	10
Malaria	0	1	0	0	0	1	21	0	0	0	2	0	23	2
Measles	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Meningococcal invasive disease	1	2	1	0	1	0	1	1	0	0	0	0	4	3
Mumps	0	0	0	0	2	0	0	1	1	0	0	1	3	2
Paralytic shellfish poisoning	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Pertussis	33	3	1	1	4	15	30	54	18	15	5	1	91	89
Plague	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pneumococcal invasive disease**	NN	36	NN	7	NN	21	NN	66	NN	13	NN	6	NN	149
Psittacosis	0	0	0	0	0	0	1	0	0	0	0	0	1	0
Rabies (animal)	5	8	12	36	0	0	0	0	0	0	1	1	18	45
Rheumatic fever	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Rubella	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Salmonellosis	0	3	3	10	9	16	48	46	13	6	10	6	83	87
Shigellosis	2	1	0	0	0	1	4	4	1	0	0	2	7	8
Smallpox**	NN	0	NN	0	NN	0	NN	0	NN	0	NN	0	NN	0
Syphilis	0	0	0	0	3	4	20	8	1	0	1	4	25	16
Tuberculosis	10	9	7	7	4	4	41	28	4	1	4	2	70	51
Tularemia	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Vibriosis	0	0	0	0	1	0	1	1	0	0	1	1	3	2
Yersiniosis	0	0	0	0	0	0	3	0	0	1	0	0	3	1
Population estimates as of July 1, 2007	39,111		23,653		105,468		363,879		75,548		69,328		676,987	

\*Individuals reported during this period for the first time with HIV or AIDS

\*\*NN = non notifiable

\*\*\*Numbers for hepatitis C represent prevalent cases during each time period, not incidence of new cases

There were no cases of several reportable diseases; for a complete list of reportable diseases see: <http://www.epi.alaska.gov/pubs/conditions/ConditionsReportable.pdf>. By national reporting standards, cases are assigned to their state of residence. Case definitions are available at: [http://www.cdc.gov/epo/dphsi/casedef/case\\_definitions.htm](http://www.cdc.gov/epo/dphsi/casedef/case_definitions.htm)

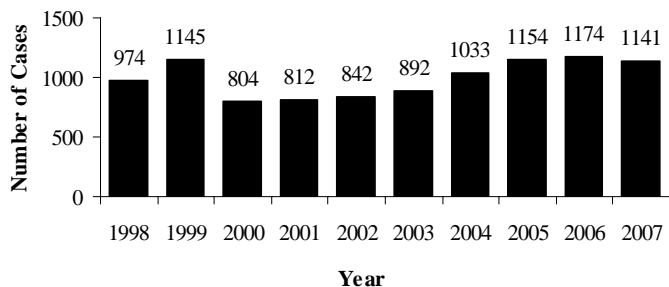
Since not all reportable illnesses are actually reported, these figures represent trends rather than actual incidence. More complete reporting of cases to the Division of Public Health will result in more accurate statistics. The above figures represent both military and civilian reporting.



## Hepatitis C

Since 1998, more than 800 cases of hepatitis C have been reported each year (Figure 7). These data represent prevalent cases (i.e., newly found acute and persistent infections plus previously found persistent infections among people who are still in the population). During 2007, the majority of cases were identified among adults aged 40–59 (60%). Males comprised 54% of cases. More information on hepatitis C may be found at the SOE website.<sup>5</sup>

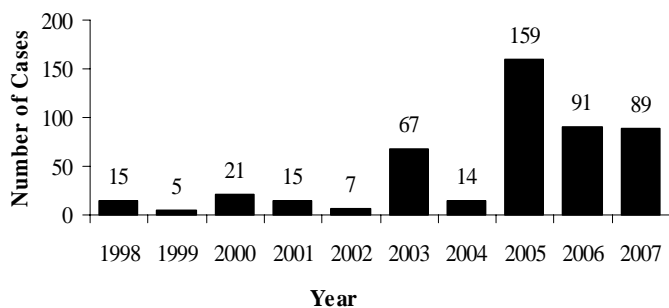
**Figure 7.** Hepatitis C in Alaska, 1998–2007



## Pertussis

The number of reported cases of pertussis has increased substantially in Alaska since the pertussis PCR test was established at ASPHL in March 2005 (Figure 8).<sup>6</sup> In 2007, 89 cases were reported, with three clusters identified. Two were small clusters in households with unimmunized children, with one involving seven cases, and the other involving five cases. The third cluster was a large outbreak among a military group resulting in 35 cases. During the outbreak, over 100 Tdap immunizations were given to cadets and staff; at least 57 contacts were given post-exposure prophylaxis. Appropriate use of Tdap vaccine for adolescents and adults can reduce pertussis morbidity in persons of all ages.<sup>7</sup>

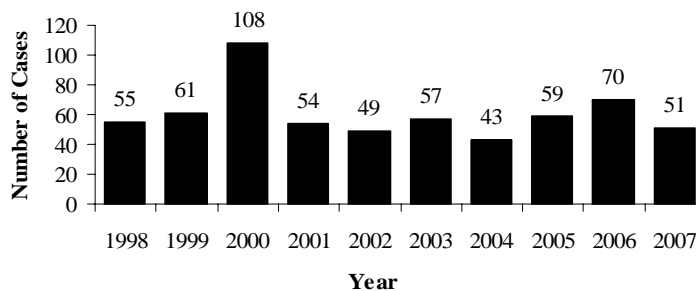
**Figure 8.** Pertussis in Alaska, 1998–2007



## Tuberculosis

The number of reported cases of tuberculosis has not changed substantially since 1998, with the exception of 2000, when an outbreak was identified among a large extended family in Anchorage, and in 2006 when an outbreak occurred among the homeless in Anchorage (Figure 9).<sup>8,9</sup> In 2007, 51 cases of tuberculosis were reported to the Alaska Tuberculosis Program, yielding an annual incidence of 7.5 cases per 100,000 population; this is well above the national rate of 4.6 cases per 100,000 population in 2006. The Southwest and Northern Regions of Alaska traditionally have the highest tuberculosis rates. More information about the Alaska Tuberculosis Program, including the 2007 annual report, can be found online.<sup>10</sup>

**Figure 9.** Tuberculosis in Alaska, 1998–2007



## Varicella

Varicella was added as a reportable disease in 2007 to assess varicella vaccine effectiveness and to monitor for illness clusters. For the 43 cases reported in 2007, ages ranged from 9 months to 29 years (mean: 11 years). No large outbreaks were identified. Two small clusters were investigated, one in an elementary school and the other in an adolescent hospital. Varicella vaccine was provided to the appropriate hospital patients and staff.

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