

*State of Alaska
Epidemiology*



Bulletin

**Recommendations
and
Reports**

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Foodborne Outbreaks in Alaska, 2004–2008

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Background

The food supply in the United States is remarkably safe. Nevertheless, food can become contaminated with a variety of bacteria, viruses and other contaminants that cause human illness. After eating contaminated food, symptoms can range from short-lived vomiting and diarrhea to much more severe symptoms, such as renal failure or death. The Centers for Disease Control and Prevention (CDC) estimates that foodborne pathogens and toxins cause 76 million illnesses, more than 300,000 hospitalizations, and 5,000 deaths nationwide each year.¹

Investigations

Between 2004 and 2008, the Alaska Section of Epidemiology (SOE) investigated 36 outbreaks of foodborne illness from all regions of the state (Figure). At least 366 persons were affected by these outbreaks, which were caused by a wide variety of pathogens or toxins; the causative agents were identified in 92% of outbreaks, and ingestion of pre-formed toxin from *Clostridium botulinum* (or botulism) caused over half (20/36) of the outbreaks (Table). Six outbreaks involving restaurants and three multi-state outbreaks were also investigated. All outbreaks involving two or more people were reported to CDC through the National Outbreak Reporting System (NORS).

In addition to epidemiologic investigations of foodborne illness, environmental health officers from the Municipality of Anchorage Department of Health and Human Services inspect retail and institutional food establishments implicated in foodborne illness in the Municipality under delegation from the Alaska Department of Environmental Conservation (DEC) Food Safety and Sanitation program. DEC conducts inspections in all other regions of the state, including manufactured food inspections in Anchorage.

Laboratory Support

Collection of appropriate and timely stool and/or vomitus specimens and food products is critical for identifying the causative agent(s). Testing of

clinical and food specimens for all potential outbreaks is free of charge to the submitter.

The Alaska State Public Health Laboratory in Anchorage (ASPHL) tests human specimens for enteric bacterial pathogens. Pulsed Field Gel Electrophoresis (PFGE) allows laboratorians at ASPHL to “fingerprint” DNA of bacterial isolates. These fingerprints are compared with a national database, PulseNet, to determine if isolates are related.² Through PFGE technology, bacterial isolates from ill Alaskans have been linked to multi-state outbreaks including those associated with consumption of peanut butter, pot pies, and contaminated ground beef. Identification and investigation of these outbreaks has resulted in several nationwide recalls of contaminated products.

The Alaska State Virology Laboratory (ASVL) in Fairbanks offers norovirus testing when an outbreak is suspected; however, norovirus testing is not available for individual patients with diarrheal illness.

The DEC Environmental Health Laboratory provides testing for food suspected of causing human illness. More information can be found at <http://www.dec.state.ak.us/eh/lab/index.htm>.

Reporting

Health care providers and laboratories are required to report suspected or confirmed cases of foodborne illness (7 AAC 27.005 and 7 AAC 27.007). Rapid reporting facilitates early identification of the source food and causative organism, leading to effective control measures, traceback, and recalls of food to prevent further illness. Any suspected case of botulism or paralytic shellfish poisoning (PSP) is a public health emergency and must be reported immediately to SOE.

Instructions and forms for reporting are available in the Conditions Reportable to Public Health Manual, available on the SOE website at

<http://www.epi.alaska.gov/pubs/conditions/ConditionsReportable.pdf>

Figure. Six Regions of Alaska

Recommendations

1. All suspected cases or clusters of foodborne illness should be reported as soon as possible to the Section of Epidemiology at 907-269-8000 or after business hours at 1-800-478-0084.
2. Health care providers should obtain stool specimens for enteric testing in Enteric Transport Media (ETM). Raw stool or vomitus for norovirus testing should be collected in a clean container. Specific collection requirements and information on ordering collection kits is available at the Section of Laboratories website <http://hss.state.ak.us/dph/labs/> or by calling 907-334-2100.
3. Clinical laboratories should forward all notifiable enteric bacterial pathogen isolates to ASPHL.
4. Suspected foodborne illness or complaints involving food in commerce should be reported to DEC at 907-269-7501 or 1-877-233-3663.

References

1. Food related diseases. Available at: <http://www.cdc.gov/ncidod/diseases/food/index.htm> Accessed on June 1, 2009.
2. Pulsed-Field Gel Electrophoresis in Alaska: A Tool to Assist Epidemiologic Investigations. *Bulletin* No. 01, January 11, 2009. Available at: http://www.epi.alaska.gov/bulletins/docs/b2008_01.pdf



Table. Foodborne Outbreaks in Alaska, 2004–2008

Month/Year	Region	Event	Agent	Number Ill	Implicated Food	Deficiency
Apr 2004	Southwest	Home	Botulism	1	Seal oil	Toxin in food
May 2004	Southwest	Home	Botulism	1	Seal oil / Dried pike	Toxin in food
Jun 2004	Gulf Coast	Cannery	<i>Clostridium perfringens</i>	30	Potatoes with sauce	Temperature abuse
Jul 2004	Gulf Coast	Cruise ship/Rd stand	<i>Vibrio parahaemolyticus</i>	62	Oysters	Toxin in food
Jun 2005	Anch/Mat-Su	Home	Trichinosis	3	Bear meat	Inadequate cooking
Sep 2005	Southwest	Home	Botulism	4	Fermented fish	Toxin in food
Sep 2005	Southwest	Home	Botulism	4	Stink heads	Toxin in food
Sep 2005	Southwest	Home	Botulism	1	Fermented seal flipper	Toxin in food
Oct 2005	Anch/Mat-Su	Farm	Campylobacter	18	Peas	Contaminated at source
Sep 2006	Southwest	Home	Botulism	1	Seal oil	Toxin in food
Sep 2006	Gulf Coast	Conference/Hotel	Norovirus	44	Crab stuffed halibut	Inappropriate food handling
Oct 2006	Anch/Mat-Su	Conference/Hotel	Epi link – no specimens	32	Unknown	Unknown
Nov 2006	Southwest	Home	Botulism	5	Fermented fish eggs	Toxin in food
Dec 2006	Southwest	Home (multistate)	Salmonella	1	Peanut butter	Contaminated at source
Feb 2007	Northern	Funeral /Potluck	Salmonella	18	Eggs	Inappropriate food handling
Mar 2007	Southwest	Home	Botulism	2	Fermented beaver tail/seal flippers	Toxin in food
Jun 2007	Southeast	Restaurant	<i>Vibrio parahaemolyticus</i>	1	Oysters	Toxin in food
Jun 2007	Southwest	Home	Botulism	2	Seal oil	Toxin in food
Jul 2007	Southwest	Home	Botulism	1	Fermented muktuk	Toxin in food
Jul 2007	Southeast	Restaurant	PSP	1	Scallops	Toxin in food
Aug 2007	Anch/Mat-Su	Home (multistate)	<i>E. coli</i> O157:H7	1	Ground beef	Contaminated at source
Aug 2007	Southwest	Home	Botulism	1	Muktuk	Toxin in food
Aug 2007	Southwest	Home	Botulism	1	Fermented fish	Toxin in food
Sep 2007	Southwest	Home	Botulism	1	Stink heads	Toxin in food
Oct 2007	Northern	Home	Botulism	1	Seal blubber	Toxin in food
Oct 2007	Anch, Interior, Gulf Coast	Homes (multistate)	Salmonella	5	Pot pies	Inadequate cooking
Jan 2008	Anch/Mat-Su	Cafeteria	Scromboid	3	Mahi-mahi	Inadequate cooking
Mar 2008	Southwest	Restaurant	Epi link-no specimens	6	Unknown	Unknown
May 2008	Southwest	Home	Botulism	1	Seal meat/oil	Toxin in food
Jun 2008	Southwest	Home	Botulism	2	Seal meat/oil	Toxin in food
Jul 2008	Gulf Coast	Home	Botulism	1	Unknown	Unknown
Jul 2008	Gulf Coast	Boarding House	<i>E. coli</i> O157:H7	3	Ground beef	Temperature abuse
Aug 2008	Southwest	Home	Botulism	2	Seal oil	Toxin in food
Aug 2008	Anch/Mat-Su	Homes	Campylobacter	103	Peas	Contaminated at source
Nov 2008	Interior	Home	Botulism	1	Muktuk	Toxin in food
Nov 2008	Southwest	Home	Botulism	2	Seal Oil	Toxin in food