

# 12. Food Safety

**Goal:**  
Reduce food borne illnesses.



## 12. Foods Safety

Health Goal for the Year 2010: Reduce foodborne illness.					
	Indicator	Alaska Data Source	U.S. Baseline	Alaska Baseline	Alaska Target Year 2010
1	Decrease in percent of inspections that find one or more "critical violations". <sup>1</sup>	DEC, Division of Environmental Health, Food Safety and Sanitation Program		41% of inspections found critical violations in food service facilities (2000)	20% decrease in critical violations
2	Reduce infections caused by key foodborne and waterborne bacteria.				
2a	Reduce number of botulism cases <sup>2</sup>	DHSS, DPH, Epidemiology		4 cases (1999) 0 cases (2000)	0 cases
2b	Reduce rate of Salmonella species infection (rate per 100,000 population)	DHSS, DPH, Epidemiology	14.0 (1999)	9.7 (2000)	8
2c	Reduce rate of E.coli 0157: H7 infection (rate per 100,000 population)	DHSS, DPH, Epidemiology	2.0 (1999)	5.1 (2000)	1
2d	Reduce rate of Campylobacter species infection (rate per 100,000 population)	DHSS, DPH, Epidemiology	17.0 (1999)	10.7 (2000)	9

<sup>1</sup>Critical violation means that the safety of a food product is seriously questioned. It is the type of violation that is more likely than others to lead to unsafe food or food illness. Please see [www.state.ak.us/dec/deh/criticalv.htm](http://www.state.ak.us/dec/deh/criticalv.htm) for a complete list. Examples include serving shellfish from unapproved areas, not separating raw foods from cooked foods, time/temperature abuse, and employees that do not adequately wash their hands.

<sup>2</sup>The population most at risk for botulism outbreaks is a subset of the total Alaska population (Natives who eat fermented foods) and that data is currently unknown.

**DEC** - Alaska Department of Environmental Conservation

**DHSS** - Alaska Department of Health and Social Services

**DPH** - Alaska Division of Public Health

### Overview

Food borne illnesses are a major public health burden, causing an estimated 76 million illnesses and 5,000 deaths per year in the United States. Food poisoning is under-reported and often goes unrecognized when people attribute symptoms to “stomach flu.”

Campylobacteriosis and salmonellosis are the most frequently reported food borne illnesses in the United States. Both organisms are common in raw meat and eggs, and outbreaks occur when these products are not adequately cooked or when cross-contamination occurs. Outbreaks of *E. coli* 0157.H7 have also become common in the United States and are associated with undercooked or raw ground beef, unpasteurized fruit juice, and many fruits and vegetables. Botulism and paralytic shellfish poisoning are also of concern in Alaska.

Food borne illnesses may become more of a problem in the future. Emerging pathogens and an increasingly global food supply create new concerns and new illnesses. Antibiotic resistant organisms are transmitted to humans through the food supply. An increasing number of people are at risk for severe forms of food borne disease as their immune systems are compromised by the aging process or by treatments for chronic diseases. The national trend towards eating more foods prepared outside the home increases concerns over the training of food service employees.

Chemical and radioactive contaminants in the food supply are of increasing concern nationally, since they can cause chronic or acute disease. Consumers are asking for better estimates of impacts on human health and for better monitoring, labeling, and dissemination of information about risks and benefits of various foods and food additives, so that they can make informed choices.

### Issues and Trends in Alaska

Some food borne illnesses seen every year in Alaska are rare in the rest of the United States. Botulism is associated with the consumption of many traditional Alaska Native fermented foods. Fish and game fermented in airtight plastic containers, rather than in the traditional porous containers, may contain lethal quantities of botulism toxin. Paralytic shellfish poisoning, another potentially life threatening illness, occurs when Alaskans gather and eat uninspected

and unregulated clams and mussels. Between 1987-2000, there were 129 reported cases of food borne botulism and 94 reported cases of paralytic shellfish poisoning. In addition, 85 reported cases of trichinosis from consumption of bear or walrus meat were reported<sup>1</sup>. None of these illnesses were associated with inspected food products.

Seafood processing in Alaska accounts for approximately 5 billion pounds annually, or 56 percent of all seafood processed in the United States. The Alaska Department of Environmental Conservation (DEC) staff conducted 626 inspections of 267 different processing facilities in 1999, checking for contamination and possible incorrect processing. DEC can detain or destroy suspect food products.

Inspections of food services or food processing facilities afford public health officials the opportunity to educate and to provide technical assistance to operators about food safety and quality.

Persistent organic pollutants (POPs) such as DDT, PCBs, and dioxins are contaminating Alaska’s once-pristine environment and subsistence food supply. POPs were used at military installations in Alaska during World War II and the Cold War. POPs and heavy metals are transported to the Arctic by large-scale air and water currents and by some migratory species. Some heavy metals (including mercury, cadmium, selenium, arsenic, and lead) are released naturally into groundwater and ocean waters. Mining, solid waste disposal, and other activity can cause increased leaching of heavy metals into rivers and groundwater. Regardless of the source, people want and need scientific information about potential exposure and risks in order to reduce unacceptable risks and to make wise choices.

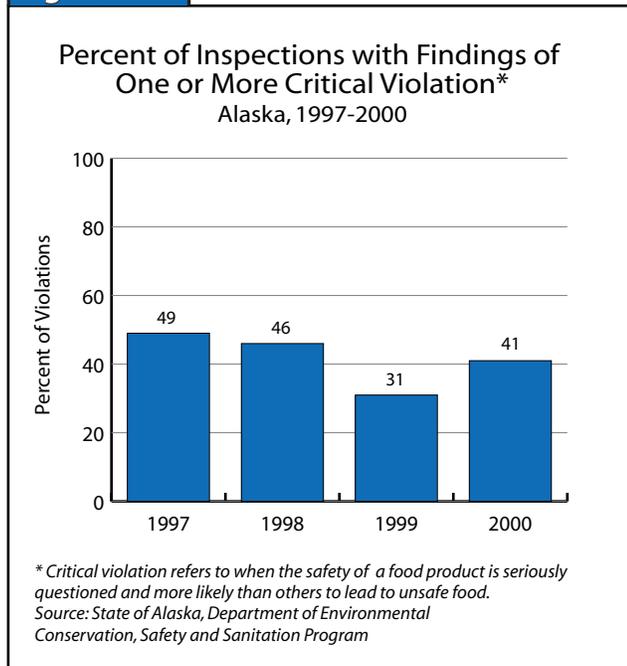
### Current Strategies and Resources

The DEC, Division of Environmental Health, has responsibility for assuring the safety of Alaska’s commercial food supplies.<sup>2</sup> A variety of food products are processed in Alaska, including fish, meat, milk, syrups, candies, and bottled water. Alaska has 10 milk producers, 2 milk processors, and the only permitted reindeer slaughter facility in the United States. In 2000, Alaska had 2,967 food service establishments, 778 food markets, 125 food processors, 368 school kitchens, and 500 temporary food vendors. (See [www.state.ak.us/dec/deh](http://www.state.ak.us/dec/deh) for more information.)

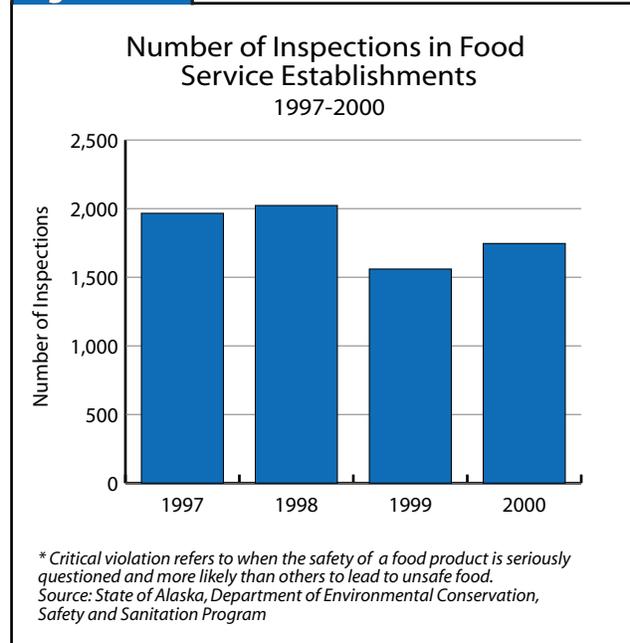
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DEC uses the number of critical violations in food service or processing facilities to assess the risk of food borne illness from commercial establishments (Figure 12-1). Critical violations are significant deficiencies likely to lead to food-borne illness. Critical violations include serving shellfish from unapproved areas, not separating raw foods from cooked foods, time/temperature abuse, and employees who do not adequately wash their hands. A complete list of critical violations can be found at [www.state.ak.us/dec/deh/criticalv.htm](http://www.state.ak.us/dec/deh/criticalv.htm).

**Figure 12-1**



**Figure 12-2**



**Table 12-1**

Alaska Cases of Selected Food borne and Waterborne Illness, 1992-2000									
	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>Salmonella</b>									
Cases	82	59	55	48	79	50	57	55	61
Rates per 100,000	18.4	9.9	9.1	8	13	8.2	9.2	8.8	9.7
<b>Campylobacter</b>									
Cases	80	67	72	56	96	71	71	58	67
Rates per 100,000	18.4	11.1	11.9	9.3	15.8	11.6	11.5	9.3	10.7
<b>Botulism</b>									
Outbreaks	5	4	7	3	5	13	6	4	0
Cases*	9	10	13	6	10	19	9	4	0
<b>E. coli 0157: H7**</b>									
Cases					5	12	7	1	32
Rates per 100,000					0.8	2	1.1	0.2	5.1

\*The population most at risk for botulism outbreaks is a subset of the total Alaska population, Alaska Natives who eat fermented foods. Therefore, the rate is not calculated.

\*\*E. coli 0157: H7 became reportable in 1996.

Significant budget reductions have decreased the number of facility inspections. (Figure 12-2). The reduction in inspections also results in fewer opportunities to provide technical assistance and operator education. Food service permits and inspections within the Municipality of Anchorage are handled by the Anchorage Department of Health and Human Services, Food Safety and Sanitation Program. There are more than 1,500 food facilities in Anchorage, and the Food Safety and Sanitation Program conducts over 4,000 inspections each year. The program also responds to consumer complaints and investigates food borne illnesses.

The Alaska Division of Public Health, Section of Epidemiology investigates reports of food-borne illness and outbreaks (Table 12-1, 12-2). Physicians, other health care providers, and medical laboratories report cases. The case numbers represent variable proportions of the true incidence of disease in the state, since only a portion of ill persons seeks treatment and some cases may not be diagnosed or reported.

Tribal health organizations are actively involved in a variety of programs to identify and assess contaminants in traditional subsistence foods. Botulism prevention is another active area. The Bristol Bay Health Corporation, for example, developed “Helping Hands,” a web site and video that teach safer methods of food fermentation.

**Table 12-2**

Reportable Food-Borne Illnesses in Alaska
❖ Amebiasis
❖ Botulism
❖ Brucellosis
❖ Campylobacteriosis
❖ Cholera
❖ Cryptosporidiosis
❖ Escherichia coli 0157: H7
❖ Giardiasis
❖ Hepatitis A
❖ Paralytic shellfish poisoning
❖ Salmonellosis
❖ Shigellosis
❖ Trichinosis
❖ Tularemia
❖ Yersiniosis

Alaska Native Health Board (ANHB) is collaborating with the Agency for Toxic Substances and Disease Registry (ATSDR) to conduct comprehensive diet surveys in thirteen subsistence communities in rural Alaska to evaluate the degree of dependence on traditional and wild foods. ANHB is continuing to evaluate the safety of traditional foods. The Alaska Native Science Commission also is doing sampling of native foods, and recording traditional knowledge as part of its ongoing work in the Arctic region.

### Data Issues and Needs

Consistent tracking of key global contaminants in traditional foods is crucial. Subsistence foods are culturally and economically important to many Alaskans. Data on contaminants enables Alaskans to make informed decisions about the health benefits of these foods.

More information is needed about food handling practices in order to focus educational campaigns on problem areas. In addition, integrated databases that connect data about food-borne outbreaks and inspection data are crucial to identify and isolate bio-terrorism attacks promptly. Analysis of food-borne outbreaks from noncommercial (not inspected or permitted) facilities would also help to identify areas of weakness in our food safety net.

### Related Focus Areas

A variety of objectives in other *Healthy Alaskans* chapters are linked to objectives in *Food Safety*.

- *Nutrition and Overweight*
- *Environmental Health*
- *Immunization and Infectious Disease*

Nutrition is linked to *Food Safety* since food free of contaminants is key to good nutrition. *Food Safety and Environmental Health* are closely related. Food borne infections and outbreaks are a significant environmental health issue. Exposure to pesticides and fish contamination is environmental health concerns. Reducing water pollution and pesticide contamination will result in less contamination of seafood, an important food safety issue in Alaska.

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### Endnotes

<sup>1</sup> Alaska Department of Health and Social Services. Division of Public Health, Alaska Section of Epidemiology. April is Food Safety Awareness Month. Epi Bulletin #16 1997.

<sup>2</sup> The Alaska Food Code is in Title 18 of the Alaska Administrative Code, section 31: 18 AAC 31.

#### Alaska

Alaska Division of Environmental Conservation: Safe Food	<a href="http://www.state.ak.us/local/akpages/ENV.CONSERV/foodhome.htm">www.state.ak.us/local/akpages/ENV.CONSERV/foodhome.htm</a>
Alaska Traditional Diet Project	<a href="http://www.atsdr.cdc.gov/alaska/">www.atsdr.cdc.gov/alaska/</a>
Helping Hands Botulism prevention	<a href="http://www.phppo.cdc.gov/phtn/botulism/default/default.asp">www.phppo.cdc.gov/phtn/botulism/default/default.asp</a>
Municipality of Anchorage: Food Safety & Sanitation	<a href="http://www.ci.anchorage.ak.us/healthsd/sanity.cfm">www.ci.anchorage.ak.us/healthsd/sanity.cfm</a>
Recommendations for Fish Consumption in Alaska, 2001	<a href="http://www.epi.hss.state.ak.us/bulletins/docs/b2001_06.htm">www.epi.hss.state.ak.us/bulletins/docs/b2001_06.htm</a>

#### National

CDC: Foodborne & Diarrheal Diseases	<a href="http://www.cdc.gov/ncidod/dbmd/foodborn.htm">www.cdc.gov/ncidod/dbmd/foodborn.htm</a>
FDA: Center for Food Safety and Applied Nutrition	<a href="http://vm.cfsan.fda.gov/list.html">vm.cfsan.fda.gov/list.html</a>
Partnership for Food Safety Education	<a href="http://www.fightbac.org/no_flash.cfm">www.fightbac.org/no_flash.cfm</a>