

Summary of Botulism Cases Reported in the United States, 2007

A total of 144 cases of botulism were reported to CDC in 2007. Foodborne botulism accounted for 26 (18%) cases, infant botulism for 91 (63%) cases, wound botulism for 22 (15%) cases, and botulism of unknown or other etiology for 5 (3%) cases.

There were 26 cases of lab-confirmed and epidemiologically-linked foodborne intoxication reported by eleven states. Of these foodborne cases, toxin type A accounted for 15 (58%) cases, toxin type B for 4 (15%) cases, and toxin type E for 7 (27%) cases. The median age of patients was 50 years, with a range of 13 years to 74 years; 12 (46%) cases were male, and 14 (54%) were female. Three deaths (12%) were reported. Four outbreaks occurred involving two or more cases. Three of the outbreaks occurred in Alaska, and each involved two cases; these outbreaks were caused by beaver tail, seal oil, and white fish. The remaining outbreak was caused by commercially canned items produced by Manufacturer X. This outbreak was associated with 10 cases in California, Indiana, Ohio, and Texas. Nine of the cases reported eating hot dog chili sauce produced by Manufacturer X, and one case reported eating canned chili with beans produced by Manufacturer X; the hot dog chili sauce was laboratory confirmed to have contained botulinum toxin. These two products, along with others produced on the same manufacturing line, were part of a nationwide recall.

There were 91 cases of infant botulism reported by 23 states. Toxin type A accounted for 39 (43%) cases, toxin type B for 51 (56%) cases, and toxin type E for 1 (1%) case. The toxin type E case occurred in Illinois. The median age of patients was 15 weeks with a range of 1 week to 44 weeks; 40 (44%) were male and 51 (56%) were female. No deaths were reported.

There were 22 cases of wound botulism reported by two states (California and Washington). Toxin type A accounted for 18 (82%) cases, toxin type B for two (9%) cases, toxin types A and B for one (5%) case, and toxin type unknown for one (5%) case. Twenty (91%) cases were injection drug users; the other two (9%) cases had unknown exposures. The median age of patients was 42 years with a range of 23 years to 58 years; 18 (82%) were male and 4 (18%) were female. Three (14%) deaths were reported.

There were five cases of botulism in which it was not determined how the patient acquired the infection. Two cases were toxin type A and occurred in a 52-year-old male and a 29-year-old female; one death was reported. Three cases were toxin type F produced by *Clostridium baratii* and occurred in a 79-year-old male, a 68-year-old female, and a 47-year-old male; one death was reported. Two of the three toxin type F cases were temporally and geographically clustered in New York State; however, no common exposure or food could link the two cases. The remaining toxin type F case occurred in California, and no exposure or food could explain his illness.

Table 1. Summary of Reported Botulism Cases — United States, 2007

Foodborne

26 cases

Median age: 50 years (range: 13–74 years)

Death: 3 confirmed, 0 without outcome information

Gender: 12 (46%) male, 14 (54%) female

Toxin type: 15 (58%) type A, 4 (15%) type B, 7 (27%) type E

4 multi-case outbreaks

Infant

91 cases

Median age: 15 weeks (range: 1 – 44 weeks)

Death: 0 confirmed

Gender: 40 (44%) male, 51 (56%) female

Toxin type: 39 (43%) type A, 51 (56%) type B, 1 (1%) type E

Wound

22 cases

Median age: 42 years (range: 23 – 58 years)

Death: 3 confirmed, 3 without outcome information

Gender: 18 (82%) male, 4 (18%) female

Toxin type: 18 (82%) type A, 2 (9%) type B, 1 (5%) type A and type B, 1 (5%)
type unknown

Unknown

5 cases

Median age: 52 years (range: 29 – 79 years)

Death: 2 confirmed, 0 without information

Gender: 3 (60%) male, 2 (40%) female

Toxin type: 2 (40%) type A, 3 (60%) type F

**Table 2. Cases of Botulism by State and Type (N=144)
January 1 – December 31, 2007**

	<u>Foodborne</u>	<u>Infant</u>	<u>Wound</u>	<u>Unknown, Other</u>
Alaska	10			
Arizona		1		
Arkansas		2		
California	1	36	20	1
Colorado		2		
Connecticut		1		
Delaware		3		
Florida		1		
Illinois		1		
Indiana	3			
Iowa		1		
Kentucky		1		
Maryland		1		
New Jersey	1	10		
New Mexico		2		1
New York		2		2
New York City		2		
North Carolina		1		
Ohio	3	1		
Oregon				1
Pennsylvania	1	13		
South Carolina		1		
Tennessee	1	1		
Texas	3	4		
Utah		2		
Virginia	1			
Washington	1	1	2	
West Virginia		1		
Wisconsin	1			
Total	26	91	22	5

**Table 3. Cases of Foodborne Botulism by Month (N=26)
January 1 – December 31, 2007**

<u>Month</u>	<u>State</u>	<u>Age (years)</u>	<u>Gender</u>	<u>Toxin Type</u>	<u>Vehicle</u>	<u>Death</u>
March	AK*	56	Female	E	Beaver tail***	No
March	AK*	66	Female	E	Beaver tail***	No
April	NJ	71	Male	B	Home-canned peppers	No
May	AK*	18	Female	B	Seal oil***	No
May	AK*	70	Male	B	Seal oil***	No
May	TN	62	Male	A	Home-canned peppers***	Yes
June	IN*	55	Male	A	Hot dog chili sauce***	No
June	TX*	13	Female	A**	Hot dog chili sauce***	No
June	TX*	40	Female	A**	Hot dog chili sauce***	No
June	TX*	14	Male	A**	Hot dog chili sauce***	No
June	OH*	39	Male	A**	Hot dog chili sauce***	No
July	CA*	51	Female	A	Chili with beans***	No
July	WI	39	Male	A	Canned cake	No
July	IN*	63	Male	A	Hot dog chili sauce	No
July	OH*	39	Male	A**	Hot dog chili sauce***	No
July	IN*	58	Female	A	Hot dog chili sauce	No
July	AK	65	Female	E	Fermented beluga	Yes
July	AK	48	Male	E	Whale blubber	No
August	OH*	37	Male	A	Hot dog chili sauce***	No
August	AK*	42	Female	E	Whitefish	No
August	AK*	44	Male	E	Whitefish	No
September	AK	55	Female	E	Seal oil	No
October	AK	48	Female	B	Fish stinkheads***	No
November	VA	58	Female	A	Home-canned green beans***	Yes
December	WA	74	Female	A	Home-canned food***	No
December	PA	43	Female	A	Home-canned soup	No

* Cases involved in multi-case outbreaks

** Negative toxin assay; toxin types imputed based on epidemiologic evidence

*** Food vehicle implicated based on epidemiologic evidence

**Table 4. Cases of Infant Botulism by Month (N=91)
January 1 – December 31, 2007**

<u>Month</u>	<u>State</u>	<u>Age (weeks)</u>	<u>Gender</u>	<u>Toxin Type</u>	<u>Death</u>
January	AZ	16	Male	B	No
January	CA	2	Male	A	No
January	CA	8	Male	A	No
January	PA	21	Male	B	No
January	PA	2	Male	B	No
January	PA	20	Female	B	No
January	UT	23	Female	A	No
January	DE	19	Male	B	No
February	CA	21	Male	A	No
February	CA	18	Female	B	No
February	CA	12	Female	B	No
February	CA	29	Male	A	No
February	DE	17	Male	B	No
February	NJ	6	Male	A	No
February	NJ	12	Male	B	No
February	NJ	30	Female	B	No
March	AR	11	Male	A	No
March	CA	24	Female	B	No
March	CA	5	Male	B	No
March	CA	12	Male	A	No
March	CA	5	Female	A	No
March	CO	17	Male	B	No
March	KY	8	Female	B	No
March	NM	20	Female	A	No
March	NY	3	Female	B	No
March	PA	17	Female	B	No
March	OH	14	Female	B	No
April	CA	4	Female	B	No
April	CA	40	Female	A	No
April	CA	8	Female	A	No
April	CA	35	Female	A	No
April	CA	36	Male	A	No
April	NY	13	Female	B	No
April	PA	6	Male	B	No
April	UT	20	Male	A	No
May	CA	4	Female	B	No
May	CA	12	Male	A	No
May	CA	22	Male	B	No
May	NJ	13	Female	B	No

Table 4. Cases of Infant Botulism by Month (N=91) (continued)
January 1 – December 31, 2007

<u>Month</u>	<u>State</u>	<u>Age (weeks)</u>	<u>Gender</u>	<u>Toxin Type</u>	<u>Death</u>
May	NJ	22	Male	B	No
May	NJ	26	Male	B	No
May	NY	14	Male	B	No
May	PA	25	Female	B	No
May	PA	10	Male	B	No
May	PA	12	Female	B	No
May	SC	5	Female	A	No
May	IL	1	Female	E*	No
May	NJ	19	Female	B	No
June	CA	23	Female	B	No
June	CA	7	Female	B	No
June	NJ	15	Female	B	No
June	NM	44	Female	A	No
June	PA	8	Male	B	No
June	TX	17	Female	A	No
June	WA	21	Female	A	No
July	CA	19	Female	B	No
July	CA	9	Female	A	No
July	CA	15	Female	A	No
July	CA	14	Male	B	No
July	CA	16	Female	A	No
July	DE	21	Female	B	No
July	NC	15	Female	B	No
July	NY	22	Female	B	No
July	TX	25	Female	A	No
August	CA	34	Female	A	No
August	CA	14	Female	A	No
August	CA	12	Female	A	No
August	CA	4	Male	A	No
August	FL	7	Male	A	No
August	NJ	11	Male	B	No
September	AR	15	Female	A	No
September	CA	5	Male	A	No
September	CA	5	Female	A	No
September	CA	28	Male	B	No
September	CT	20	Male	B	No
September	IA	20	Female	A	No
September	PA	19	Female	B	No
October	CA	31	Male	A	No

* Botulinum toxin Type E produced by *Clostridium botulinum*

Table 4. Cases of Infant Botulism by Month (N=91) (continued)
January 1– December 31, 2007

<u>Month</u>	<u>State</u>	<u>Age (weeks)</u>	<u>Gender</u>	<u>Toxin Type</u>	<u>Death</u>
October	CA	6	Female	A	No
October	MD	16	Male	B	No
October	PA	24	Male	B	No
October	TN	5	Male	B	No
October	WV	9	Female	A	No
November	TX	4	Male	B	No
December	CA	15	Male	A	No
December	CA	18	Female	A	No
December	CO	18	Male	A	No
December	NJ	32	Female	B	No
December	PA	20	Female	B	No
December	PA	6	Female	B	No
December	TX	1	Male	B	No

**Table 5. Cases of Wound Botulism by Month (N=22)
January 1 – December 31, 2007**

<u>Month</u>	<u>State</u>	<u>Age (years)</u>	<u>Gender</u>	<u>Toxin Type</u>	<u>Exposure</u> ***	<u>Death</u>
January	CA	44	Male	A	IDU	No
January	CA	33	Male	A	IDU	No
February	CA	53	Male	A	IDU	Unknown
March	CA	26	Male	A	IDU	No
April	CA	41	Female	Unknown*	IDU	No
May	WA	24	Male	A	IDU	Yes
May	CA	29	Male	A	IDU	No
May	CA	40	Female	A	IDU	No
June	CA	40	Female	A	IDU	No
June	CA	48	Male	A	IDU	No
June	CA	54	Male	A	IDU	Yes
July	CA	42	Female	A	IDU	No
July	CA	33	Male	A&B**	IDU	Unknown
July	CA	29	Male	A	IDU	Unknown
July	CA	44	Male	A	IDU	No
July	CA	40	Male	B	IDU	No
August	CA	23	Male	A	IDU	No
September	CA	55	Male	A	IDU	No
September	CA	49	Male	A	Unknown	No
October	WA	55	Male	A	IDU	No
November	CA	52	Male	A	IDU	No
December	CA	58	Male	B	Unknown	Yes

* Serum quantity not sufficient for toxin typing

** Toxin type A was identified in the serum sample, and toxin type B in an enrichment culture from the wound

*** IDU = injection drug user

Table 6. Cases of Unknown Botulism by Month (N=5)
January 1 – December 31, 2007

<u>Month</u>	<u>State</u>	<u>Age (years)</u>	<u>Gender</u>	<u>Toxin Type</u>	<u>Exposure</u> ^{**}	<u>Death</u>
May	NY	79	Male	F*	Unknown ^{**}	Yes
May	NY	68	Female	F*	Unknown ^{**}	No
July	CA	47	Male	F*	Unknown	No
August	NM	52	Male	A	Unknown	Yes
August	OR	29	Female	A	Unknown	No

*Botulinum toxin Type F produced by *Clostridium baratii*

**These two cases not linked by any common factor, including food.