

National Botulism Surveillance Summary 2016

An overview of national botulism surveillance is available at:

http://www.cdc.gov/nceid/dfwed/PDFs/bot-overview_508c.pdf

Summary of Botulism Cases Reported in 2016

A total of 205 confirmed botulism cases were reported to CDC in 2016—150 (73%) infant, 29 (14%) foodborne, 24 (12%) wound, and 3 (1%) of unknown etiology. Ten probable cases were reported—eight foodborne and two wound (Table 1).

The 150 cases of infant botulism were reported from 29 states and the District of Columbia, with California reporting the most (n=47; 32%). The median age of patients was 4 months (range: 0–10 months); 74 (49%) were boys. Toxin types were B (n=89; 59%), A (n=54; 36%), Ab (n=2; 1%), Bf (n=2; 1%), F (n=2; 1%), and Ba (n=1; 1%). No deaths were reported.

Twenty-nine confirmed foodborne botulism cases were reported from seven states, with Mississippi reporting the most (n=18; 62%). Among the foodborne cases, 23 were associated with three outbreaks in three states; the remaining six cases were sporadic. An outbreak associated with illicitly produced alcohol, known as “pruno” or “hooch,” in a federal correctional facility involved 18 patients in Mississippi and one patient in Oklahoma who transferred before illness began.* The cause of the second outbreak was presumed to be a home-canned product (2 cases), and the cause of the third outbreak (2 cases) was unknown (Table 2a). Toxin types were A (n=25; 83%), E (n=3; 10%), and B (n=1; 3%). The median age of patients was 39 years (range: 23–89 years); 24 (80%) were men. Two deaths were reported.

Eight cases of probable foodborne botulism (clinically compatible illness, not laboratory-confirmed, with an epidemiologic link to a food or drink suspected to be contaminated with botulinum toxin) were reported from two states. The median age of patients was 36 years (range: 25–61 years); all were men. Seven were associated with the Mississippi outbreak*, and one was associated with eating seal oil (Table 2b). No deaths were reported.

The 24 cases of wound botulism were reported from eight states, with California reporting the most (n=15; 63%). An outbreak in New Mexico occurred among three persons who injected black tar heroin. Among the 21 sporadic cases, 19 occurred among persons who injected black tar heroin, one in a person who injected methamphetamine, and one in a person with a gunshot wound. The median age of patients was 45 years (range: 25–68 years); 17 (71%) were men. Toxin types were A (n=21; 88%) and B (n=2; 8%); the presence of toxin was confirmed in one patient’s blood but there was not enough blood to determine the toxin type. No deaths were reported.

The two cases of probable wound botulism (clinically compatible case with no suspected exposure to contaminated food and with a history in the 2 weeks before illness began of either a fresh, contaminated wound or injection drug use) were reported from two states. The 38- and 58-year-old patients both injected black tar heroin; one was a man. No deaths were reported.

The three cases of botulism of unknown or other etiology were reported from three states. The median age of patients was 66 years (range: 33–76 years); two (67%) were women. Toxin types were A (n=2; 67%) and F (n=1; 33%). One death was reported. Two cases were suspected to be due to adult intestinal colonization, a rare form with a mechanism similar to infant botulism. A case of type F botulism occurred in a pregnant woman who experienced fetal death during the second trimester; the route of exposure was not determined.

*The Morbidity and Mortality Weekly Report (MMWR) Notes from the Field: Botulism Outbreak from Drinking Prison-Made Illicit Alcohol in a Federal Correctional Facility—Mississippi, June 2016 (<https://www.cdc.gov/mmwr/volumes/65/wr/mm6552a8.htm>) regarding this outbreak reported 31 cases based on an outbreak definition; here we report 26 cases based on the 2011 CSTE case definition (<https://www.cdc.gov/nndss/conditions/botulism/case-definition/2011/>).

Table 1. Summary of reported botulism cases by transmission category and case status—United States, 2016

Botulism Type	Cases	Median Age	Deaths	Sex	Toxin Type	Exposures	Outbreaks*
Infant	150	4 months (range: 0–10 months)	0	74 (49%) male 76 (51%) female	89 (59%) B 54 (36%) A 2 (1%) Ab 2 (1%) Bf 2 (1%) F 1 (1%) Ba	—	0
Foodborne, Confirmed	29	39 years (range: 23–89 years)	2	24 (83%) male 5 (17%) female	25 (86%) A 3 (10%) E 1 (3%) B	(See Table 2a)	3
Foodborne, Probable†	8	36 years (range: 25–61 years)	0	8 (100%) male	—	(See Table 2b)	1
Wound, Confirmed	24	45 years (range: 25–68 years)	0	17 (71%) male 7 (29%) female	21 (88%) A 2 (8%) B 1 (4%) A/B/E‡	23 related to IDU§; 1 gunshot wound	1
Wound, Probable¶	2	48 years (range: 38–58 years)	0	1 (50%) male 1 (50%) female	—	2 related to IDU§	0
Unknown/ Other	3	66 years (range: 33–76 years)	1	1 (33%) male 2 (67%) female	2 (67%) A 1 (33%) F	—	0

* Outbreak defined as two or more cases resulting from a common exposure.

† Probable foodborne botulism is a clinically compatible case with an epidemiologic link (e.g., ingestion of a home-canned food within the previous 48 hours).

‡ Confirmed presence of toxin, but toxin type was indeterminate.

§ IDU: injection drug use.

¶ Probable wound botulism is a clinically compatible case with no suspected exposure to contaminated food and with a history in the 2 weeks before illness began of either a fresh, contaminated wound or injection drug use.

Table 2a. Foods linked to laboratory-confirmed botulism cases (n=29)—United States, 2016

Month	State	Confirmed or Suspected Food	Toxin Type	Number of Cases
February	Alaska	Beaver tail*	E	1
April	California	Commercial grain and vegetable product*	A	1
June	Oklahoma	Home-canned food	A	1
June	Mississippi/Oklahoma	Pruno/hooch	A	19
August	Oregon	Home-canned pickled vegetables	E	1
September	Texas	Tamales	B	1
September	Alaska	Fish heads and seal oil†	E	1
October	California	Unknown	A	2
December	Washington	Home-canned fish	A	2

* Foods followed by an asterisk were confirmed as the source by detection of toxin in food. In foods without an asterisk, toxin was not detected or food item not available for testing; food vehicle was suspected based on clinical history, epidemiological evidence, and/or reported method of preparation or storage.

Table 2b. Foods linked to probable foodborne botulism cases (n=8)—United States, 2016

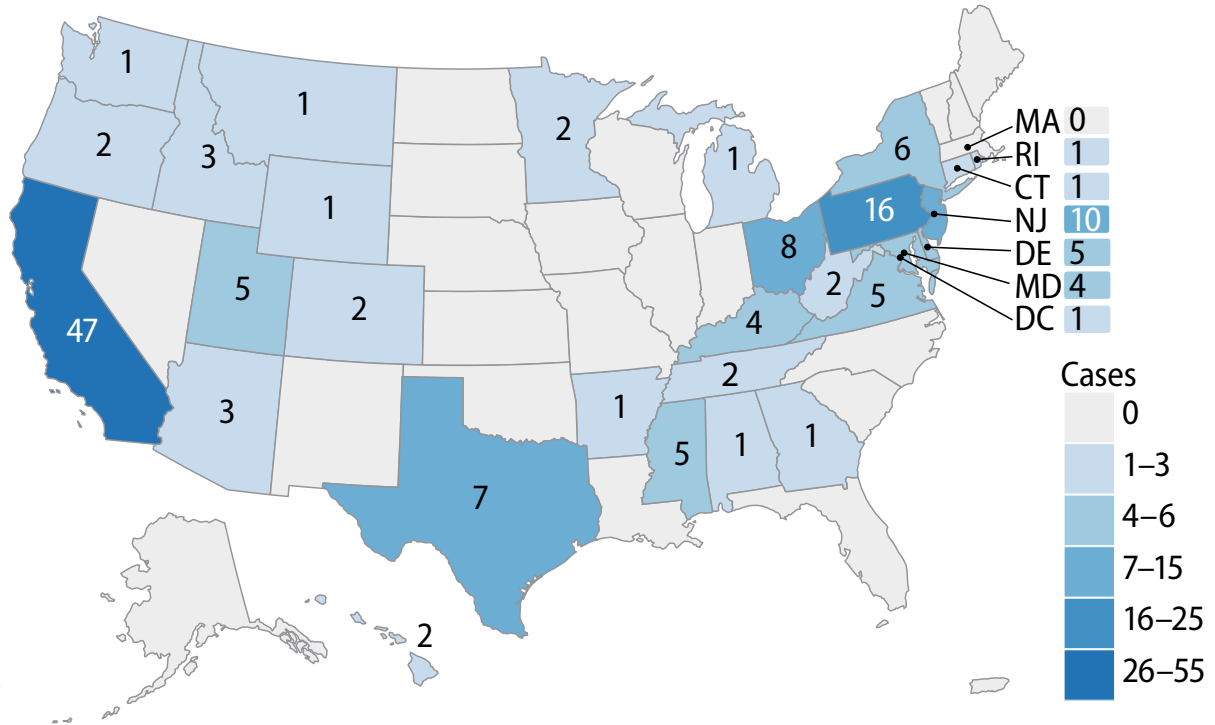
Month	State	Suspected Food	Number of Cases
June	Mississippi	Pruno/hooch	7
August	Alaska	Seal blubber	1

* Foods followed by an asterisk were confirmed as the source by detection of toxin in food. In foods without an asterisk, toxin was not detected or food item not available for testing; food vehicle was suspected based on clinical history, epidemiological evidence, and/or reported method of preparation or storage.

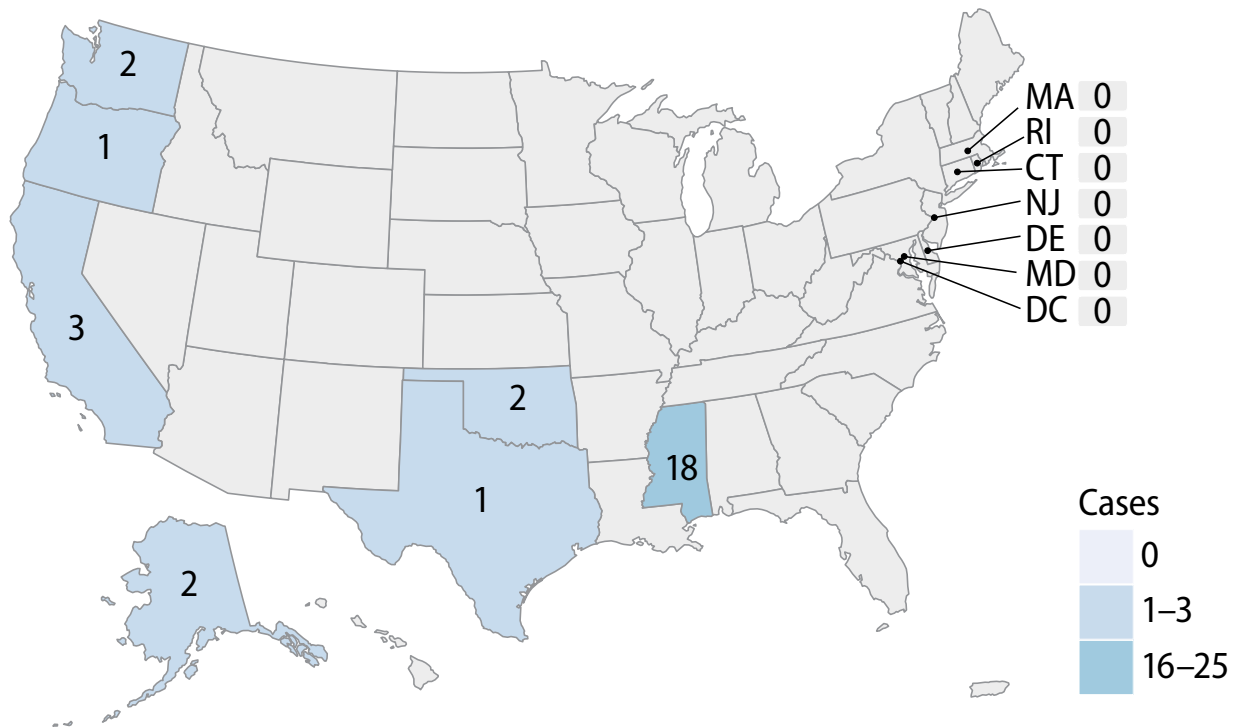
Figure 1. Number of confirmed botulism cases by state and transmission category—United States, 2016

Accessible information for all figures is located in the [Appendix, page 10](#).

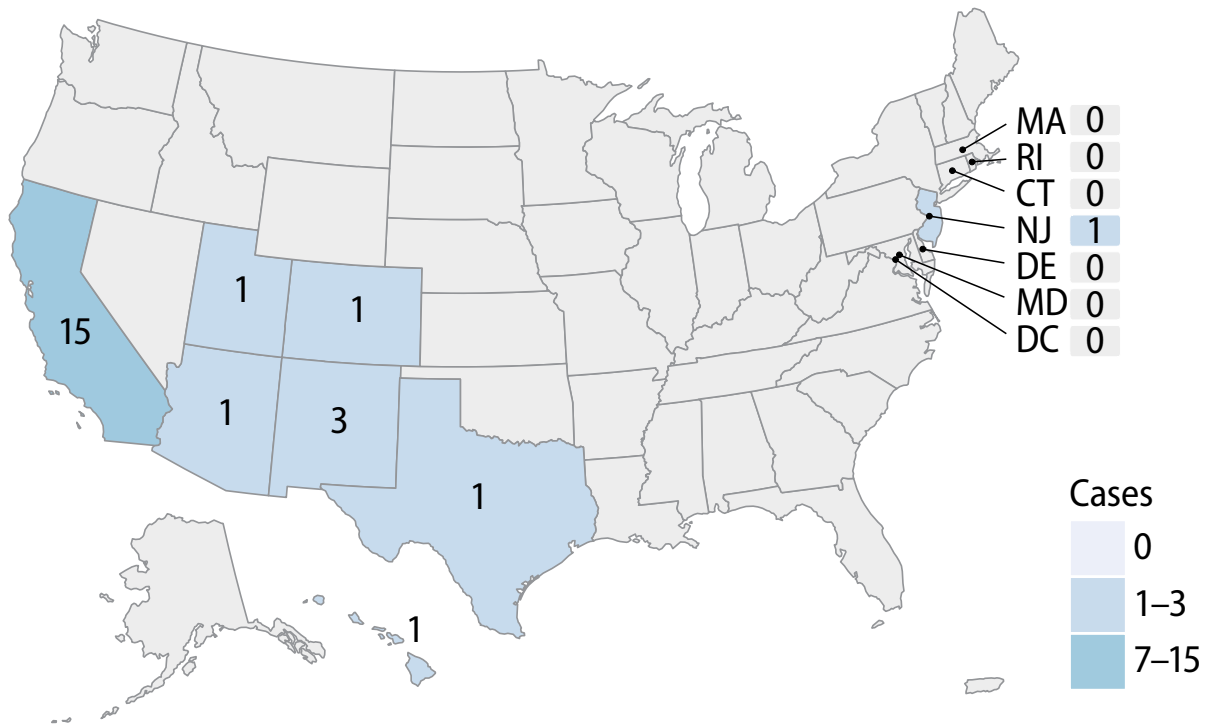
Infant (n=150)



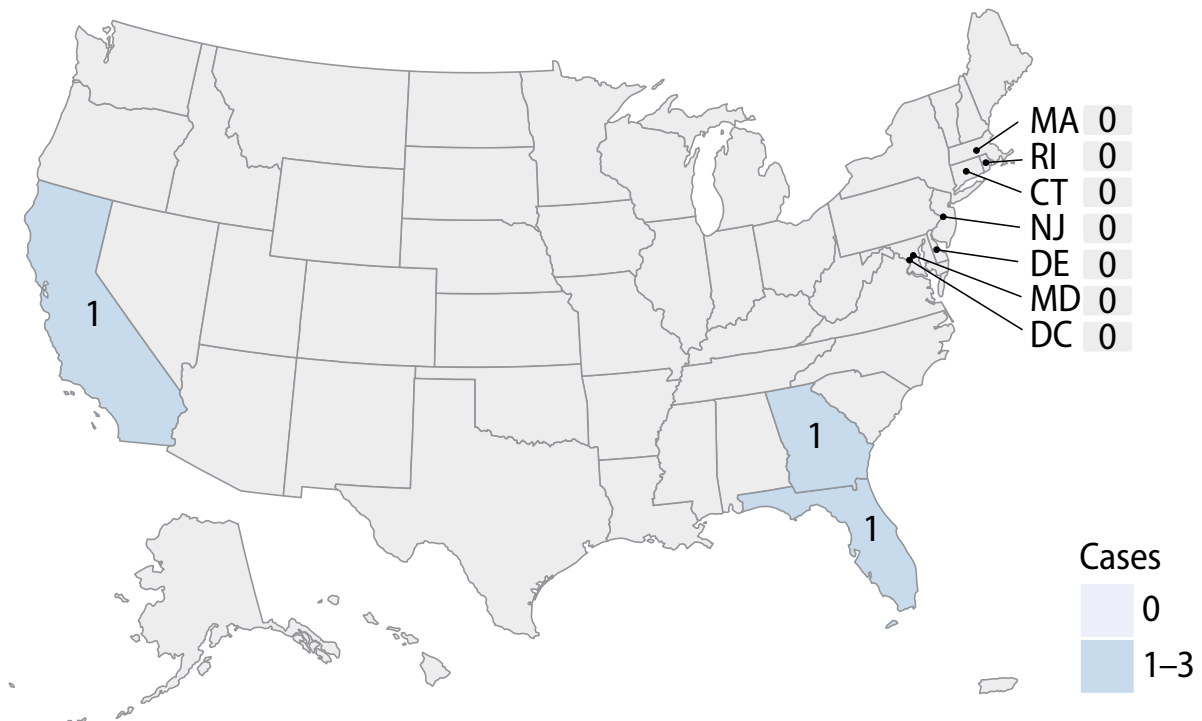
Foodborne (n=29)



Wound (n=24)



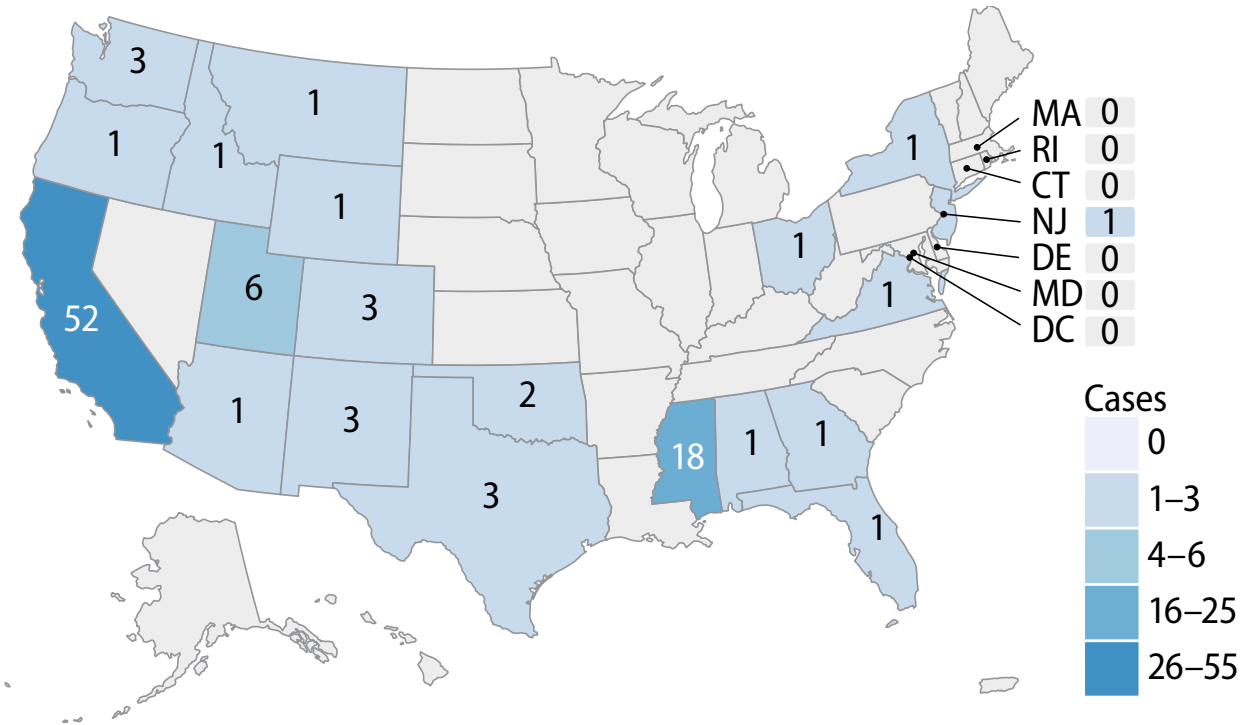
Other (n=3)



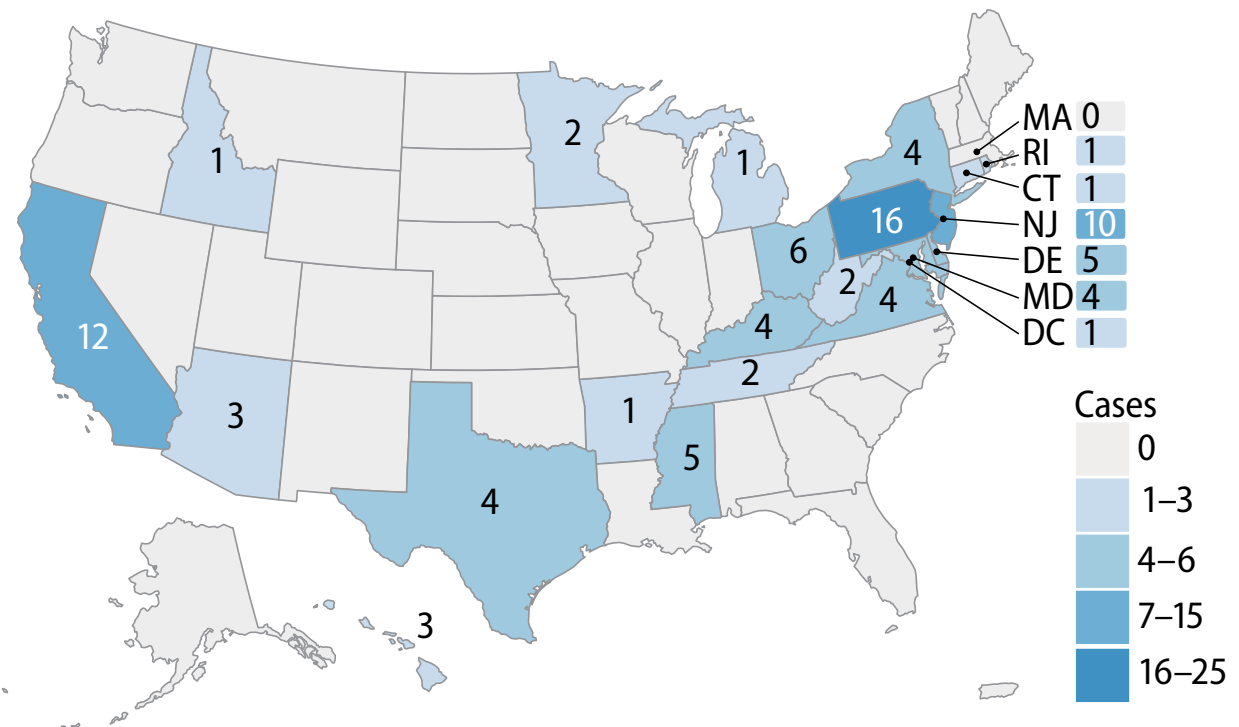
**Figure 2. Number of confirmed botulism cases by state and toxin type—
United States, 2016**

Accessible information for all figures is located in the [Appendix, page 10](#).

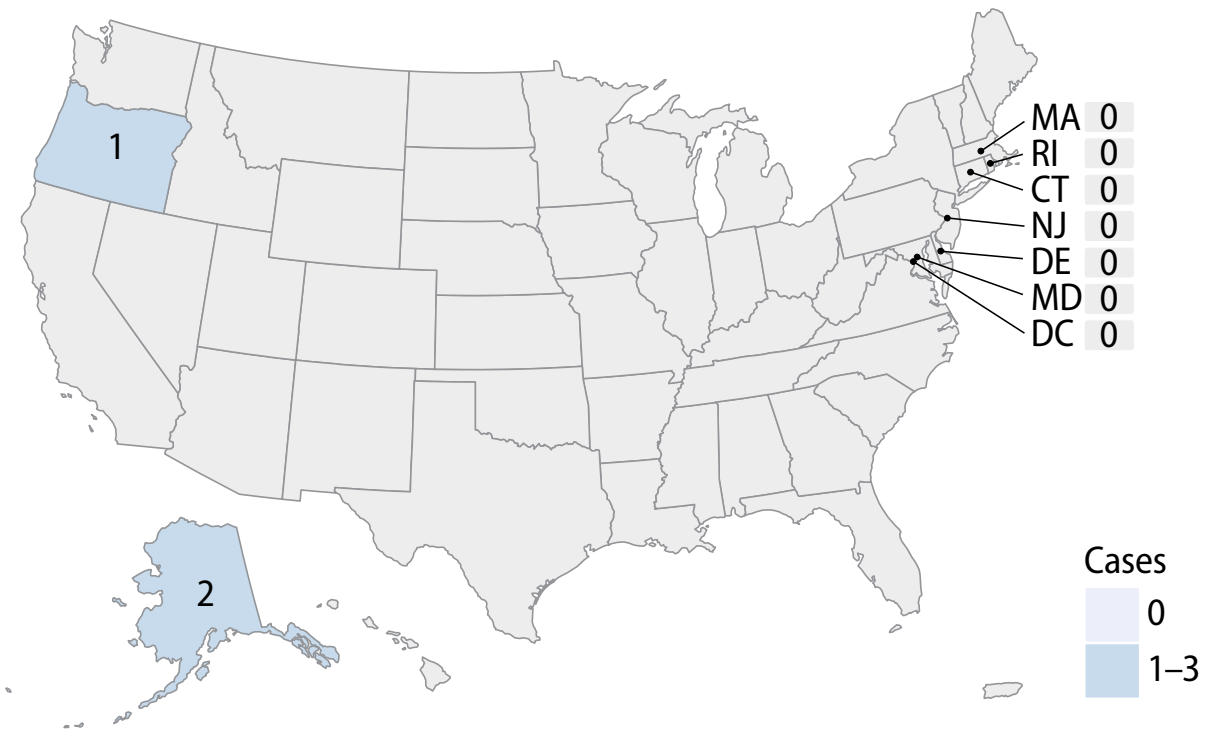
Toxin type A (n=102)



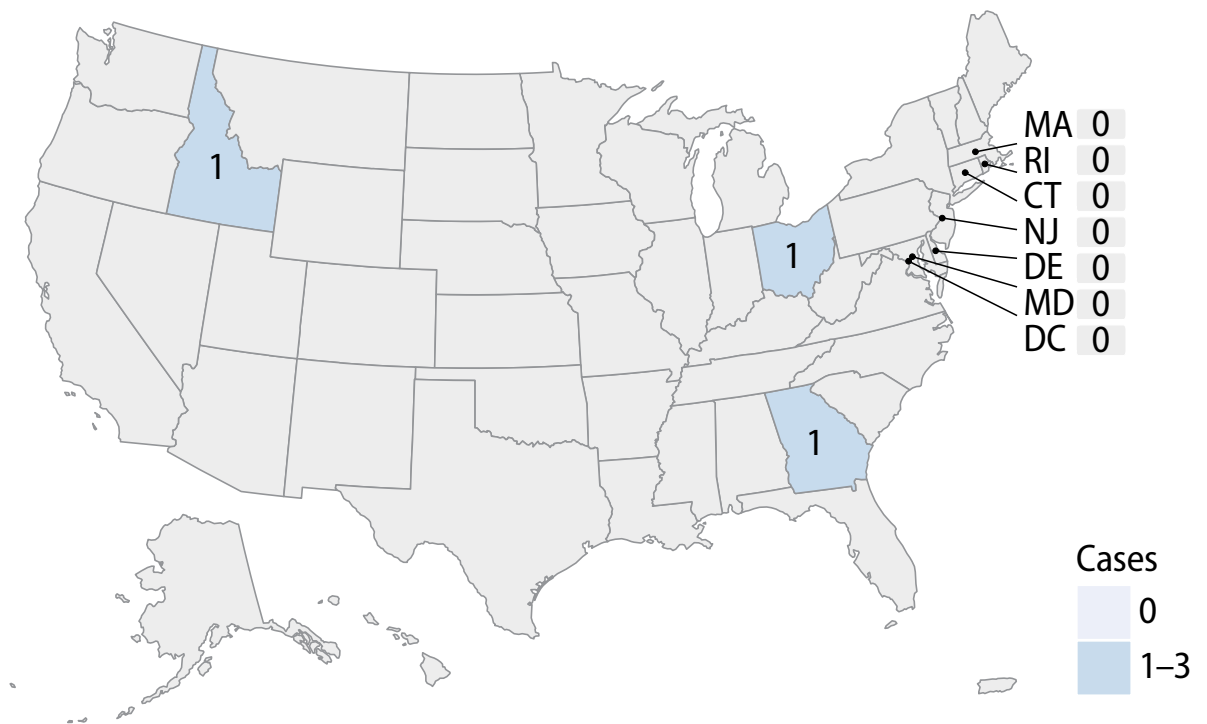
Toxin type B (n=92)



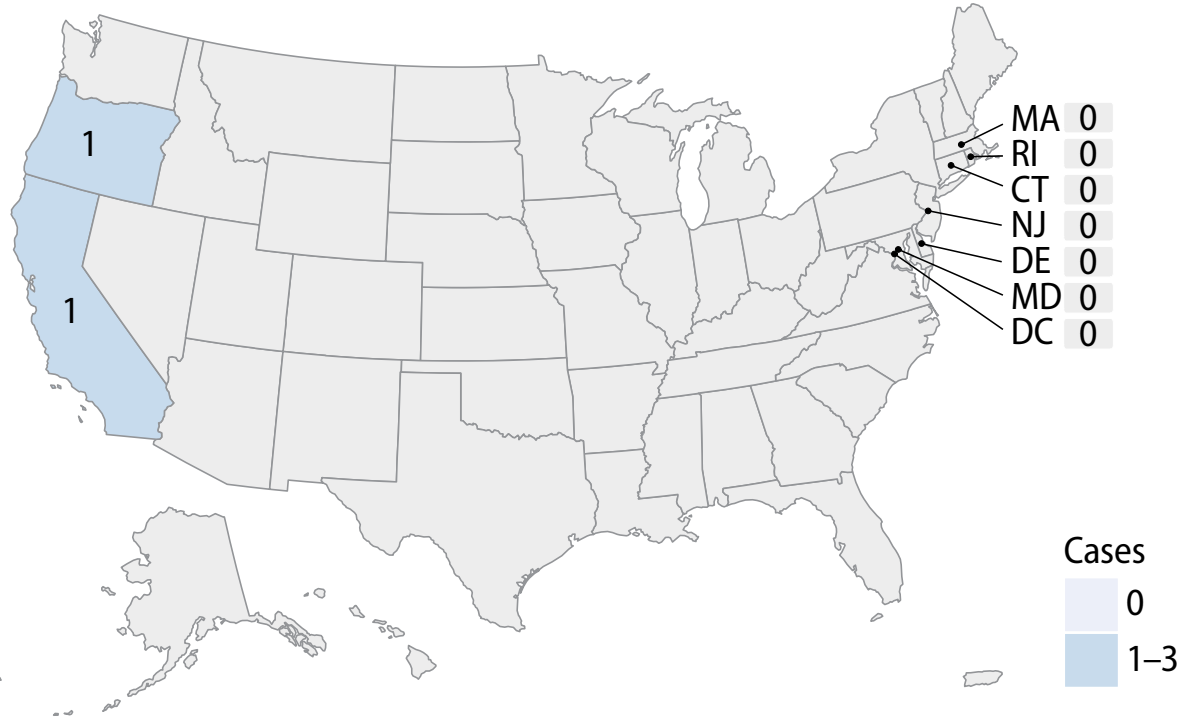
Toxin type E (n=3)



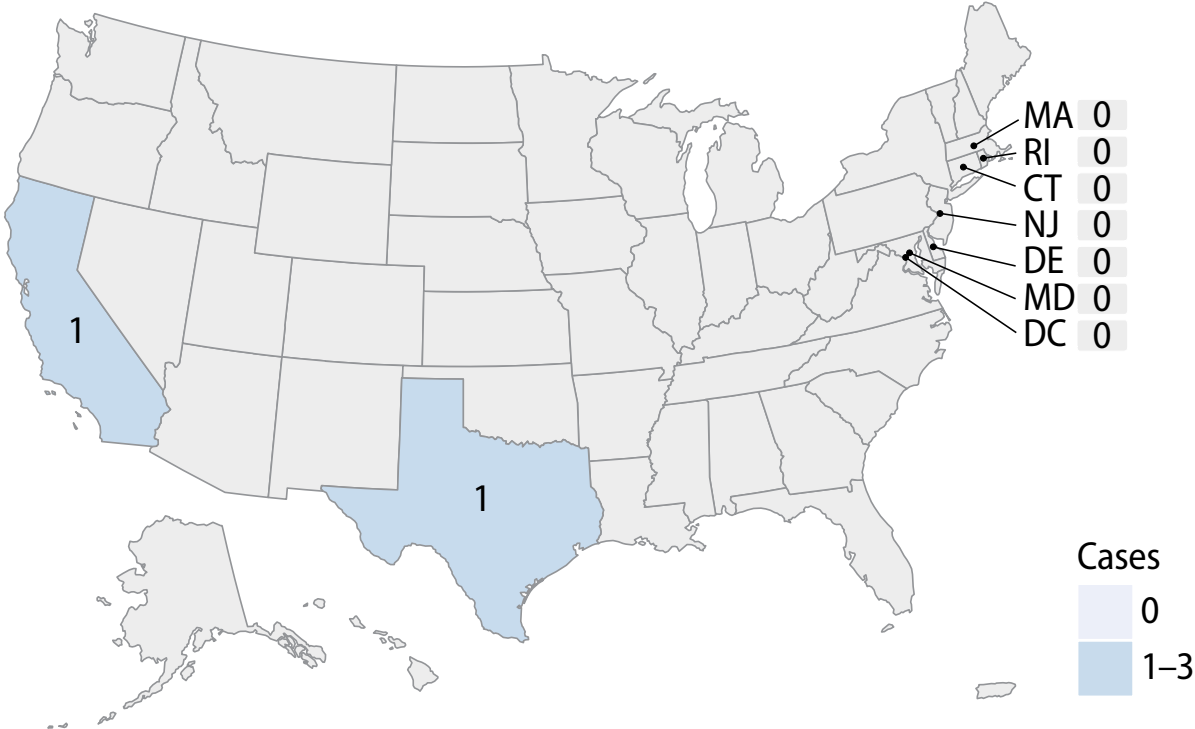
Toxin type F (n=3)



Toxin type Ab (n=2)



Toxin type Bf (n=2)



Toxin type Ba (n=1)

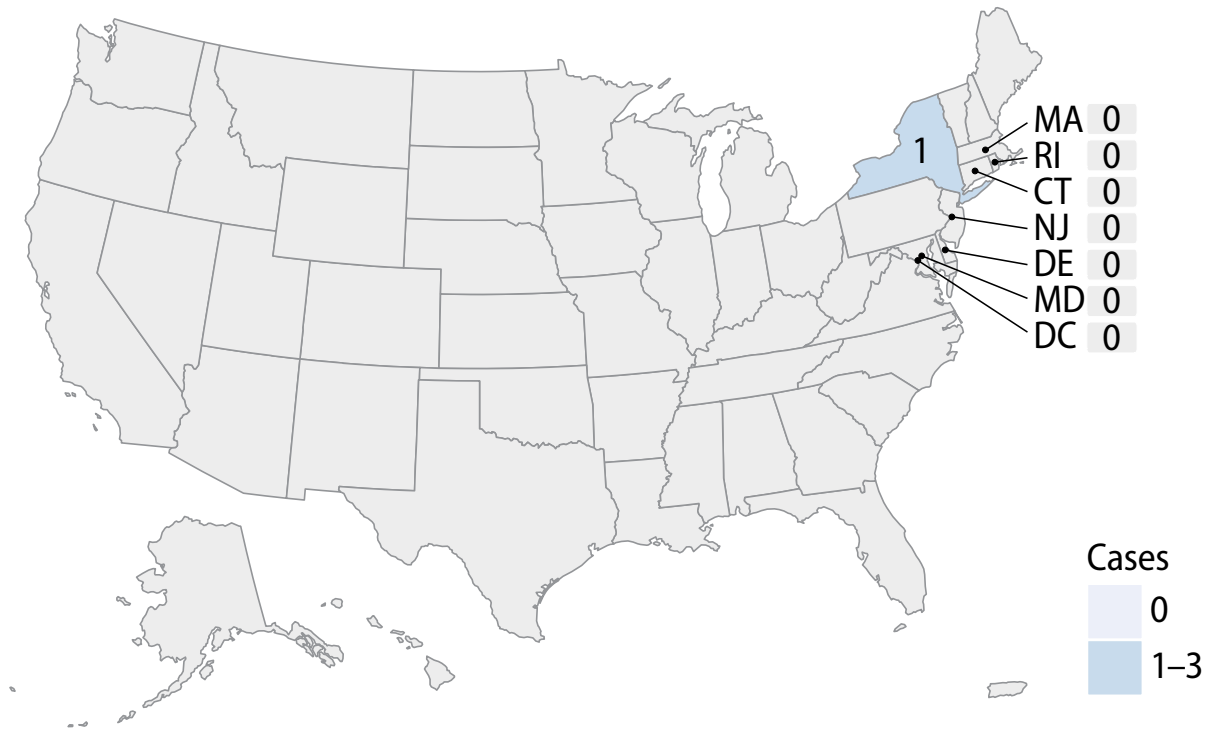
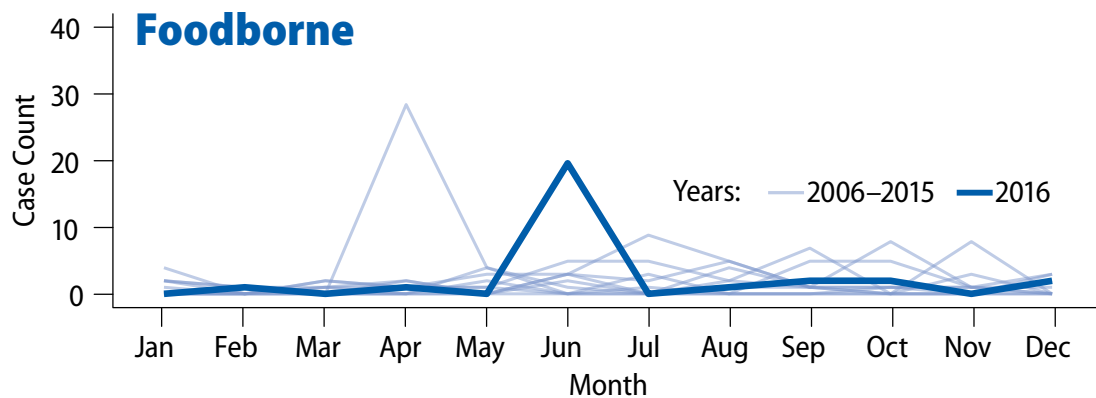
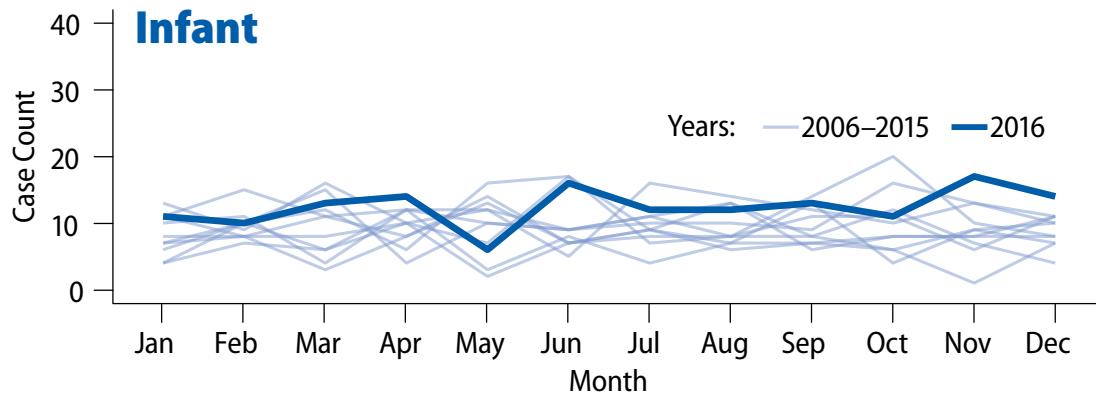
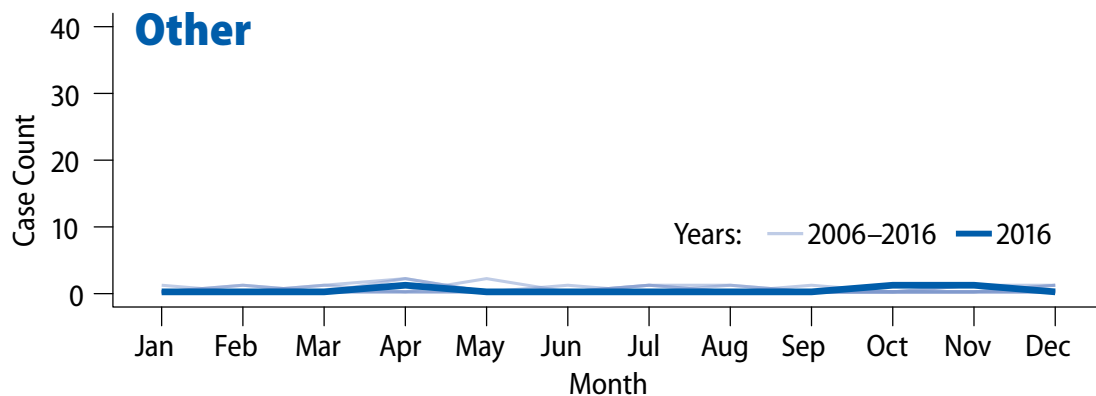
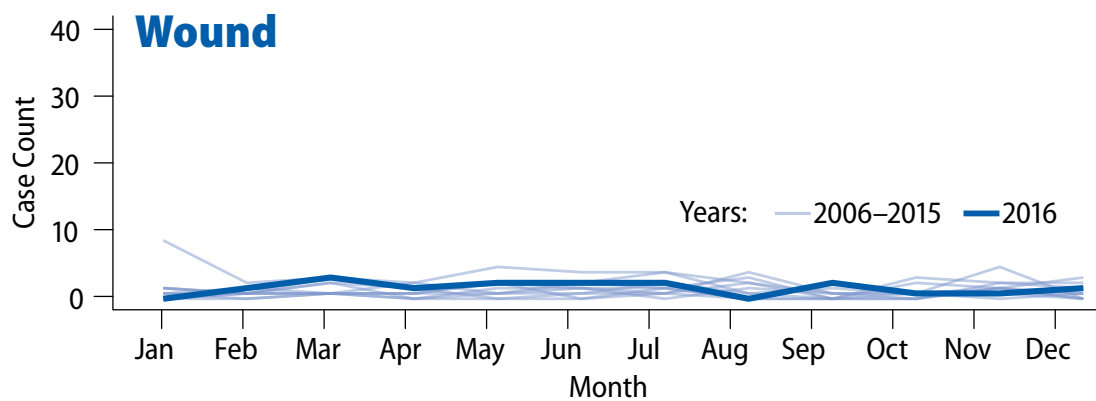


Figure 3. Confirmed botulism cases by month of onset and transmission category—United States, 2006–2016

Accessible information for all figures is located in the [Appendix, page 10](#).



(In June 2016, there was a foodborne botulism outbreak in Mississippi.)



References

[1] Botulism (*Clostridium botulinum*) 2011 Case Definition. Atlanta, GA: Centers for Disease Control and Prevention. Available at: <http://wwwn.cdc.gov/NNDSS/script/casedef.aspx?CondYrID=622&DatePub=2011-01-01>

Recommended Citation:

Centers for Disease Control and Prevention (CDC). Botulism Annual Summary, 2016. Atlanta, Georgia: US Department of Health and Human Services, CDC, 2017.

Appendix: Accessible Explanations of Figures

Figure 1: Choropleth maps of confirmed botulism cases for 2016 by state and transmission categories: Infant (n=150), Foodborne (n= 29), Wound (n=24), and Other (n=3) in the United States. These choropleth maps show through color progression (shading) the state case counts by transmission category with the darker colors representing more cases. States with no color (white) did not have any 2016 cases. <https://www.cdc.gov/botulism/files/Figure-1.csv>

Figure 2: Choropleth maps of confirmed botulism cases for 2016 by state and toxin types: A (n=102), B (n= 92), E (n=3), F (n=3), Ab (n=2), Bf (n=2), Ba (n=1), and A/B/E (n=1) in the United States. These choropleth maps show through color progression (shading) the state case counts by toxin type with the darker colors representing more cases. States with no color (white) did not have any 2016 cases. <https://www.cdc.gov/botulism/files/Figure-2.csv>

Figure 3: Multi-line graphs of confirmed 2016 botulism cases plotted against 2006–2015 botulism cases by month of onset and transmission categories: Infant, Foodborne, Wound, and Other in the United States. These graphs visualize the current year versus the previous 10 individual years.

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