

Table 3. Number of reported foodborne disease outbreaks and outbreak-associated illnesses, by etiology and place where food was eaten\* — United States, 2008

Etiology	Outbreaks (Illnesses) Attributed to a Single Consumption Location											Outbreaks (Illnesses) Attributed to a Single Consumption Location	Outbreaks (Illnesses) Attributed to Multiple Consumption Locations	Outbreaks (Illnesses) Attributed to Unknown Consumption Location	Total Outbreaks (Illnesses)													
	Banquet facility	Camp	Church, temple, etc	Day care center	Fair, festival, temporary mobile service	Grocery store	Hospital	Nursing home	Office setting	Picnic																		
<b>Bacterial</b>																												
<i>Salmonella</i> §	1	(4)	--	--	3	(232)	1	(594)	3	(171)	--	--	--	--	1	(71)	90	(2082)	14	(490)	13	(2388)	117	(4960)				
<i>Clostridium perfringens</i>	3	(272)	--	--	3	(77)	--	--	2	(108)	--	--	--	1	(22)	2	(18)	37	(1366)	1	(10)	2	(33)	40	(1409)			
<i>Escherichia coli</i> , Shiga toxin-producing¶	1	(15)	1	(59)	1	(17)	--	--	2	(17)	--	--	--	2	(9)	24	(369)	6	(391)	6	(160)	6	(36)	36	(920)			
<i>Campylobacter</i> **	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(11)	19	(305)	4	(302)	2	(8)	2	(8)	25	(615)			
<i>Bacillus cereus</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	15	(122)	--	--	--	--	--	--	15	(122)			
<i>Staphylococcus enterotoxin</i> ††	--	--	--	1	(30)	--	--	--	--	--	--	--	--	--	--	13	(268)	1	(43)	--	--	--	--	14	(311)			
<i>Shigella</i> §§	--	--	--	--	--	2	(29)	--	--	--	--	--	--	--	--	6	(170)	--	--	--	--	--	--	6	(170)			
<i>Clostridium botulinum</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	(10)	--	--	--	--	--	--	4	(10)			
Other bacterial	2	(85)	--	--	--	--	--	1	(3)	--	--	--	--	--	--	3	(88)	--	--	--	--	--	--	3	(88)			
<i>Listeria</i> ¶¶	--	--	--	--	--	--	--	--	--	1	(5)	--	--	--	--	2	(13)	1	(20)	--	--	--	--	3	(33)			
<i>Vibrio parahaemolyticus</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(2)	--	--	--	--	--	--	1	(2)			
<i>Vibrio</i> other	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(3)	--	--	--	--	--	--	1	(3)			
<b>Bacterial total</b>	<b>7</b>	<b>(376)</b>	<b>1</b>	<b>(59)</b>	<b>8</b>	<b>(356)</b>	<b>3</b>	<b>(623)</b>	<b>8</b>	<b>(299)</b>	<b>0</b>	<b>(0)</b>	<b>1</b>	<b>(5)</b>	<b>4</b>	<b>(42)</b>	<b>2</b>	<b>(18)</b>	<b>4</b>	<b>(91)</b>	<b>215</b>	<b>(4798)</b>	<b>27</b>	<b>(1256)</b>	<b>23</b>	<b>(2589)</b>	<b>265</b>	<b>(8643)</b>
<b>Chemical and toxin</b>																												
Scombroid toxin/histamine	1	(30)	--	--	--	--	--	--	1	(2)	--	--	--	--	--	--	11	(52)	--	--	1	(3)	12	(55)	12	(55)		
Ciguatoxin	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(8)	12	(66)	--	--	2	(15)	14	(81)	14	(81)		
Cleaning agents	--	--	--	--	--	--	1	(4)	--	--	--	--	--	--	--	3	(14)	--	--	--	--	--	--	3	(14)	3	(14)	
Heavy metals	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(2)	2	(54)	--	--	--	--	--	--	2	(54)	2	(54)	
Other chemical	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	(42)	--	--	--	--	--	--	2	(42)	2	(42)	
Mycotoxins	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(3)	--	--	--	--	--	--	1	(3)	1	(3)	
Paralytic shellfish poison	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(3)	1	(3)	1	(3)		
Plant/herbal toxins	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(6)	--	--	--	--	--	--	1	(6)	1	(6)	
<b>Chemical and toxin total</b>	<b>1</b>	<b>(30)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>1</b>	<b>(4)</b>	<b>0</b>	<b>(0)</b>	<b>1</b>	<b>(2)</b>	<b>0</b>	<b>(0)</b>	<b>1</b>	<b>(2)</b>	<b>32</b>	<b>(237)</b>	<b>0</b>	<b>(0)</b>	<b>4</b>	<b>(21)</b>	<b>36</b>	<b>(258)</b>	<b>36</b>	<b>(258)</b>		
<b>Parasitic</b>																												
<i>Cyclospora</i>	1	(3)	--	--	--	--	--	--	--	--	--	--	--	--	--	2	(7)	1	(59)	--	--	--	--	3	(66)	3	(66)	
<i>Cryptosporidium</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	(32)	2	(32)	2	(32)	2	(32)
<i>Giardia</i>	--	--	--	--	--	--	--	--	--	--	--	--	1	(8)	--	--	1	(8)	--	--	--	--	--	1	(8)	1	(8)	
<b>Parasitic total</b>	<b>1</b>	<b>(3)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>0</b>	<b>(0)</b>	<b>1</b>	<b>(8)</b>	<b>0</b>	<b>(0)</b>	<b>3</b>	<b>(15)</b>	<b>1</b>	<b>(59)</b>	<b>2</b>	<b>(32)</b>	<b>6</b>	<b>(106)</b>	<b>6</b>	<b>(106)</b>		
<b>Viral</b>																												
Norovirus	37	(1119)	4	(103)	4	(88)	1	(9)	--	--	--	--	2	(90)	6	(150)	19	(418)	--	--	305	(7069)	37	(1711)	14	(395)	356	(9175)
Hepatitis A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(22)	--	--	--	1	(22)	1	(22)	
Rotavirus	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(27)	--	--	--	--	--	--	1	(27)	1	(27)	
Other viral	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	(9)	--	--	--	1	(9)	1	(9)		
<b>Viral total</b>	<b>37</b>	<b>(1119)</b>	<b>4</b>	<b>(103)</b>	<b>4</b>	<b>(88)</b>	<b>1</b>	<b>(9)</b>	<b>0</b>	<b>(0)</b>	<b>2</b>	<b>(90)</b>	<b>6</b>	<b>(150)</b>	<b>19</b>	<b>(418)</b>	<b>0</b>	<b>(0)</b>	<b>306</b>	<b>(7096)</b>	<b>39</b>	<b>(1742)</b>	<b>14</b>	<b>(395)</b>	<b>359</b>	<b>(9233)</b>		
<b>Known Etiology***</b>	<b>46</b>	<b>(1528)</b>	<b>5</b>	<b>(162)</b>	<b>12</b>	<b>(444)</b>	<b>5</b>	<b>(636)</b>	<b>8</b>	<b>(299)</b>	<b>1</b>	<b>(2)</b>	<b>3</b>	<b>(95)</b>	<b>10</b>	<b>(192)</b>	<b>23</b>	<b>(446)</b>	<b>5</b>	<b>(99)</b>	<b>556</b>	<b>(12146)</b>	<b>67</b>	<b>(3057)</b>	<b>43</b>	<b>(3037)</b>	<b>666</b>	<b>(18240)</b>
<b>Unknown Etiology†††</b>	<b>11</b>	<b>(288)</b>	<b>2</b>	<b>(42)</b>	<b>3</b>	<b>(141)</b>	--	--	<b>2</b>	<b>(57)</b>	--	--	<b>1</b>	<b>(17)</b>	<b>2</b>	<b>(29)</b>	<b>10</b>	<b>(90)</b>	<b>3</b>	<b>(39)</b>	<b>312</b>	<b>(3160)</b>	<b>18</b>	<b>(377)</b>	<b>20</b>	<b>(725)</b>	<b>350</b>	<b>(4262)</b>
<b>Multiple Etiologies*</b>	<b>2</b>	<b>(151)</b>	--	--	<b>1</b>	<b>(50)</b>	--	--	--	--	--	--	<b>1</b>	<b>(62)</b>	--	--	<b>17</b>	<b>(573)</b>	<b>0</b>	<b>(0)</b>	<b>1</b>	<b>(77)</b>	<b>18</b>	<b>(650)</b>	<b>18</b>	<b>(650)</b>		
<b>Total</b>	<b>59</b>	<b>(1967)</b>	<b>7</b>	<b>(204)</b>	<b>16</b>	<b>(635)</b>	<b>5</b>	<b>(636)</b>	<b>10</b>	<b>(356)</b>	<b>1</b>	<b>(2)</b>	<b>4</b>	<b>(112)</b>	<b>13</b>	<b>(283)</b>	<b>33</b>	<b>(536)</b>	<b>8</b>	<b>(138)</b>	<b>885</b>	<b>(15879)</b>	<b>85</b>	<b>(3434)</b>	<b>64</b>	<b>(3839)</b>	<b>1034</b>	<b>(23152)</b>

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§ *Salmonella* serotypes accounting for more than five reported outbreaks include: Enteritidis (30 outbreaks), Typhimurium (18), Heidelberg (8), and Braenderup (6).

¶ STEC O111 (1 confirmed outbreak), STEC O157:H7 (32 confirmed outbreaks), and STEC O157:NM(H-) (3 confirmed outbreaks)

\*\* *Campylobacter coli* (1 confirmed outbreak, 0 suspected outbreaks), *Campylobacter jejuni* (15 confirmed outbreaks, 4 suspected outbreaks)

†† *Staphylococcus aureus* (6 confirmed outbreaks, 5 suspected outbreaks) and *Staphylococcus* unknown (3 suspected outbreaks)

§§ *Shigella sonnei* (6 confirmed outbreaks, 0 suspected outbreaks)

¶¶ *Listeria monocytogenes* (3 confirmed outbreaks, 0 suspected outbreaks)

\*\*\* The denominator for the total etiology percentages is the Known Etiology total. The denominator for the Known Etiology, Unknown Etiology, and Multiple Etiologies percentages is the Total.

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	Prison, jail	Private home	Restaurant or deli	School	Wedding reception	Workplace cafeteria	Workplace, not cafeteria	Other setting	Unknown or undetermined											
<b>Bacterial</b>																				
<i>Salmonella</i> §	1 (22)	23 (230)	36 (499)	1 (10)	1 (3)	-- --	2 (15)	6 (137)	8 (74)	90 (2082)	14 (490)	13 (2388)	117 (4960)							
<i>Clostridium perfringens</i>	4 (402)	5 (87)	9 (57)	1 (50)	-- --	-- --	4 (148)	3 (125)	-- --	37 (1366)	1 (10)	2 (33)	40 (1409)							
<i>Escherichia coli</i> , Shiga toxin-producing¶	1 (6)	7 (116)	7 (100)	-- --	-- --	-- --	1 (27)	1 (3)	-- --	24 (369)	6 (391)	6 (160)	36 (920)							
<i>Campylobacter</i> **	-- --	12 (256)	2 (4)	-- --	-- --	-- --	-- --	3 (13)	1 (21)	19 (305)	4 (302)	2 (8)	25 (615)							
<i>Bacillus cereus</i>	-- --	3 (26)	11 (51)	-- --	1 (45)	-- --	-- --	-- --	-- --	15 (122)	-- --	-- --	15 (122)							
<i>Staphylococcus enterotoxin</i> ††	-- --	4 (52)	8 (186)	-- --	-- --	-- --	-- --	-- --	-- --	13 (268)	1 (43)	-- --	14 (311)							
<i>Shigella</i> §§	-- --	1 (12)	1 (2)	1 (123)	1 (4)	-- --	-- --	-- --	-- --	6 (170)	-- --	-- --	6 (170)							
<i>Clostridium botulinum</i>	-- --	4 (10)	-- --	-- --	-- --	-- --	-- --	-- --	-- --	4 (10)	-- --	-- --	4 (10)							
Other bacterial	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	3 (88)	-- --	-- --	3 (88)							
<i>Listeria</i> ¶¶	-- --	1 (8)	-- --	-- --	-- --	-- --	-- --	-- --	-- --	2 (13)	1 (20)	-- --	3 (33)							
<i>Vibrio parahaemolyticus</i>	-- --	-- --	1 (2)	-- --	-- --	-- --	-- --	-- --	-- --	1 (2)	-- --	-- --	1 (2)							
<i>Vibrio</i> other	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	1 (3)	1 (3)	-- --	-- --	1 (3)							
<b>Bacterial total</b>	<b>6 (430)</b>	<b>60 (797)</b>	<b>75 (901)</b>	<b>3 (183)</b>	<b>3 (52)</b>	<b>0 (0)</b>	<b>7 (190)</b>	<b>13 (278)</b>	<b>10 (98)</b>	<b>215 (4798)</b>	<b>27 (1256)</b>	<b>23 (2589)</b>	<b>265 (8643)</b>							
<b>Chemical and toxin</b>																				
Scombroid toxin/histamine	-- --	3 (7)	6 (13)	-- --	-- --	-- --	-- --	-- --	-- --	11 (52)	-- --	1 (3)	12 (55)							
Ciguatoxin	-- --	9 (48)	2 (10)	-- --	-- --	-- --	-- --	-- --	-- --	12 (66)	-- --	2 (15)	14 (81)							
Cleaning agents	-- --	-- --	1 (3)	-- --	-- --	-- --	-- --	1 (7)	-- --	3 (14)	-- --	-- --	3 (14)							
Heavy metals	-- --	1 (52)	-- --	-- --	-- --	-- --	-- --	-- --	-- --	2 (54)	-- --	-- --	2 (54)							
Other chemical	-- --	1 (39)	-- --	1 (3)	-- --	-- --	-- --	-- --	-- --	2 (42)	-- --	-- --	2 (42)							
Mycotoxins	-- --	1 (3)	-- --	-- --	-- --	-- --	-- --	-- --	-- --	1 (3)	-- --	-- --	1 (3)							
Paralytic shellfish poison	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	1 (3)	1 (3)							
Plant/herbal toxins	-- --	1 (6)	-- --	-- --	-- --	-- --	-- --	-- --	-- --	1 (6)	-- --	-- --	1 (6)							
<b>Chemical and toxin total</b>	<b>0 (0)</b>	<b>16 (155)</b>	<b>9 (26)</b>	<b>1 (3)</b>	<b>0 (0)</b>	<b>0 (0)</b>	<b>0 (0)</b>	<b>1 (7)</b>	<b>0 (0)</b>	<b>32 (237)</b>	<b>0 (0)</b>	<b>4 (21)</b>	<b>36 (258)</b>							
<b>Parasitic</b>																				
<i>Cyclospora</i>	-- --	1 (4)	-- --	-- --	-- --	-- --	-- --	-- --	-- --	2 (7)	1 (59)	-- --	3 (66)							
<i>Cryptosporidium</i>	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	2 (32)	2 (32)							
<i>Giardia</i>	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	1 (8)	-- --	-- --	1 (8)							
<b>Parasitic total</b>	<b>0 (0)</b>	<b>1 (4)</b>	<b>0 (0)</b>	<b>0 (0)</b>	<b>0 (0)</b>	<b>0 (0)</b>	<b>0 (0)</b>	<b>0 (0)</b>	<b>0 (0)</b>	<b>3 (15)</b>	<b>1 (59)</b>	<b>2 (32)</b>	<b>6 (106)</b>							
<b>Viral</b>																				
Norovirus	4 (822)	24 (262)	164 (2598)	14 (610)	5 (138)	1 (117)	8 (124)	11 (394)	1 (27)	305 (7069)	37 (1711)	14 (395)	356 (9175)							
Hepatitis A	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	1 (22)	-- --	1 (22)							
Rotavirus	-- --	-- --	-- --	1 (27)	-- --	-- --	-- --	-- --	-- --	1 (27)	-- --	-- --	1 (27)							
Other viral	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	1 (9)	-- --	1 (9)							
<b>Viral total</b>	<b>4 (822)</b>	<b>24 (262)</b>	<b>164 (2598)</b>	<b>15 (637)</b>	<b>5 (138)</b>	<b>1 (117)</b>	<b>8 (124)</b>	<b>11 (394)</b>	<b>1 (27)</b>	<b>306 (7096)</b>	<b>39 (1742)</b>	<b>14 (395)</b>	<b>359 (9233)</b>							
<b>Known Etiology***</b>	<b>10 (1252)</b>	<b>101 (1218)</b>	<b>248 (3525)</b>	<b>19 (823)</b>	<b>8 (190)</b>	<b>1 (117)</b>	<b>15 (314)</b>	<b>25 (679)</b>	<b>11 (125)</b>	<b>556 (12146)</b>	<b>67 (3057)</b>	<b>43 (3037)</b>	<b>666 (18240)</b>							
<b>Unknown Etiology†††</b>	<b>2 (326)</b>	<b>29 (198)</b>	<b>200 (1148)</b>	<b>8 (216)</b>	<b>5 (69)</b>	<b>3 (36)</b>	<b>11 (225)</b>	<b>14 (192)</b>	<b>6 (47)</b>	<b>312 (3160)</b>	<b>18 (377)</b>	<b>20 (725)</b>	<b>350 (4262)</b>							
<b>Multiple Etiologies*</b>	-- --	2 (9)	4 (94)	2 (81)	1 (45)	-- --	-- --	4 (81)	-- --	17 (573)	0 (0)	1 (77)	18 (650)							
<b>Total</b>	<b>12 (1578)</b>	<b>132 (1425)</b>	<b>452 (4767)</b>	<b>29 (1120)</b>	<b>14 (304)</b>	<b>4 (153)</b>	<b>26 (539)</b>	<b>43 (952)</b>	<b>17 (172)</b>	<b>885 (15879)</b>	<b>85 (3434)</b>	<b>64 (3839)</b>	<b>1034 (23152)</b>							

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