

National Enteric Disease Surveillance: *Shigella* Annual Report, 2016

The Laboratory-based Enteric Disease Surveillance (LEDS) system contributes to the understanding of human shigellosis in the United States by collecting reports of infections¹ from state and regional public health laboratories. Reporting to LEDS is voluntary; the number of laboratories submitting reports varies somewhat from year to year, although almost all public health laboratories report every year. Occasionally, multiple isolates are reported from a single episode of infection in a person; this report includes only one isolate of a given *Shigella* species per person within a 30-day period.

An overview of surveillance methods and systems for *Shigella* infections is available online at <http://www.cdc.gov/ncezid/dfwed/PDFs/Shigella-Overview-508.pdf> (1).

Data in this report are current as of March 8, 2018.

Summary

- In 2016, 52 state and regional public health laboratories reported 12,597 cases of culture-confirmed *Shigella* infections to LEDS.
- Of the 12,597 infections, 11,779 (94%) were identified to the species level.
- Distribution by species was similar to previous years, with *Shigella sonnei* accounting for the largest percentage of infections (80.5%), followed by *Shigella flexneri* (12.6%), *Shigella boydii* (0.2%), and *Shigella dysenteriae* (0.1%).
- Overall national incidence of culture-confirmed *Shigella* in 2016 (3.92 cases per 100,000 population) was 8.6% lower than in 2015 (4.29 cases per 100,000 population)².
- Since the mid-1980s, reporting of *Shigella* without species information has fluctuated (range: 0.03–1.16 cases per 100,000 population). This may be partly due to outbreaks for which public health laboratories did not characterize all isolates to the species level. Incidence of isolates without species information generally parallels incidence of *Shigella sonnei*.
- As in previous years, children 1–4 years old had the highest incidence of all age groups.
- The incidence of *Shigella* infection is driven by outbreaks; it does not exhibit a distinct seasonal pattern.

¹ For reporting year 2016, the LEDS *Shigella* Annual Report only includes *Shigella* infections confirmed by culture.

² The practice of testing clinical specimens for presence of *Shigella* species with culture independent diagnostic tests (CIDT) without concomitant bacterial culture and subtyping has increased in recent years (2) (3); this may lead to underestimation of national *Shigella* incidence by the LEDS system. In 2016, 23% of *Shigella* cases reported to FoodNet sites were not confirmed by culture.

Tables, Figures

Figure 1. Incidence rate of culture-confirmed <i>Shigella</i> infection (all species) reported to LEDS, United States, 1970–2016.....	3
Table 1a. Culture-confirmed <i>Shigella</i> infections reported to LEDS, by species, United States, 2016	4
Table 1b. Incidence rate of culture-confirmed <i>Shigella</i> infections reported to LEDS, by age group, sex, United States, 2016 (n=11,521 with age and sex information reported).....	4
Figure 2a. Incidence rate of culture-confirmed <i>Shigella</i> infection reported to LEDS, by reporting jurisdiction, United States, 2016 (n=12,597)	5
Figure 2b. Incidence rate of culture-confirmed <i>Shigella sonnei</i> infection reported to LEDS, by reporting jurisdiction, United States, 2016 (n=10,139)	6
Figure 2c. Incidence rate of culture-confirmed <i>Shigella flexneri</i> infection reported to LEDS, by reporting jurisdiction, United States, 2016 (n=1,592)	7
Figure 3. Percentage of culture-confirmed <i>Shigella</i> infections reported to LEDS, by month of specimen collection, United States, 2006–2016	8

Appendices

Appendix 1. Culture-confirmed <i>Shigella</i> infections reported to LEDS by species, age group, and sex, 2016	11
Appendix 2a. Culture-confirmed <i>Shigella</i> infections reported to LEDS by serotype and reporting jurisdiction, 2016(Alaska to Kansas).....	14
Appendix 2b. Culture-confirmed <i>Shigella</i> infections reported to LEDS by serotype and reporting jurisdiction, 2016(Kentucky to Nevada)	15
Appendix 2c. Culture-confirmed <i>Shigella</i> infections reported to LEDS by serotype and reporting jurisdiction, 2016 (New York to Wyoming).....	16
Appendix 3. Culture-confirmed <i>Shigella</i> infections reported to LEDS by species, serotype, and year, 2006–2016...	17

Figure 1. Incidence rate of culture-confirmed *Shigella* infection (all species) reported to LEDES, United States, 1970–2016

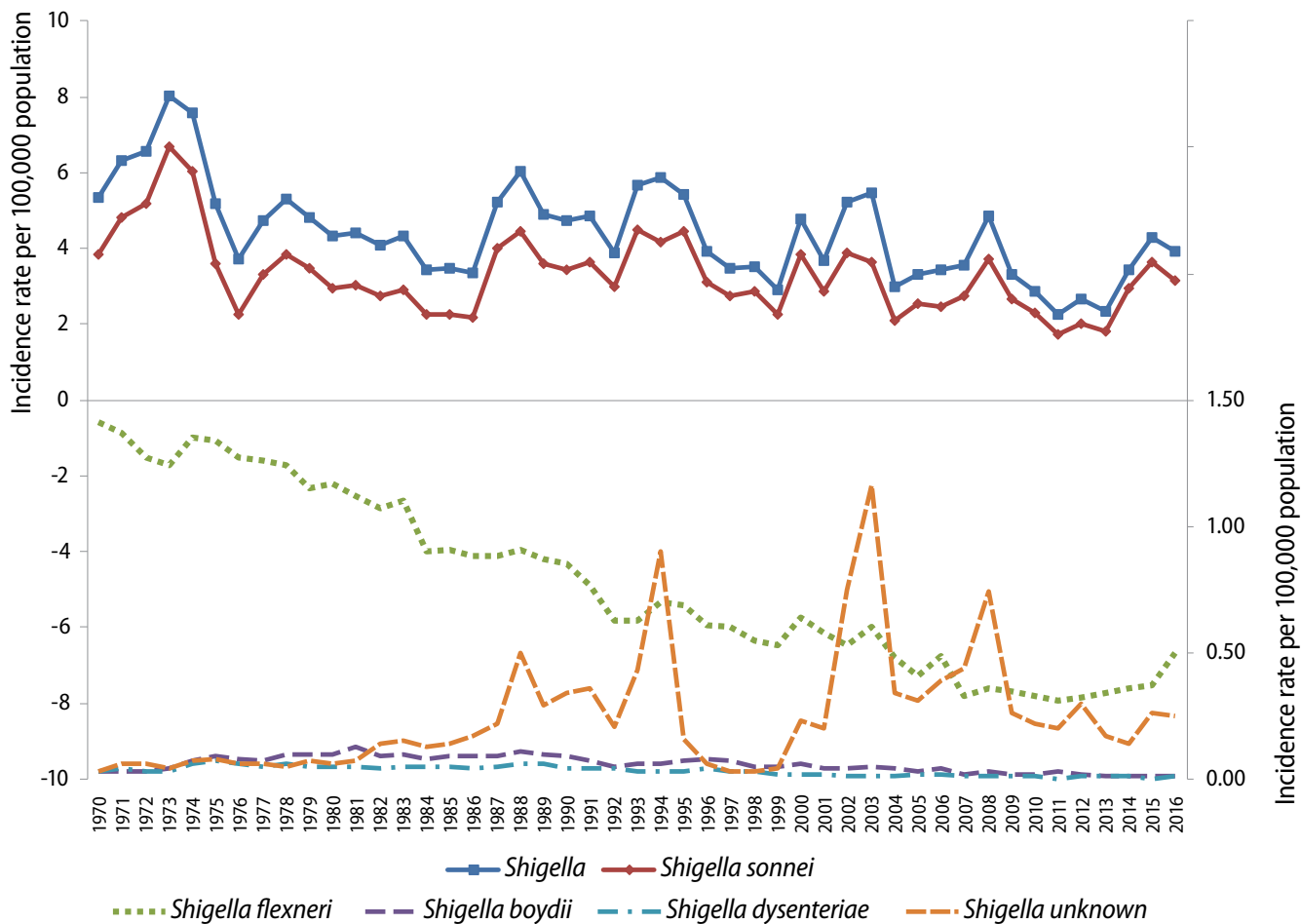


Figure 1 shows overall incidence of *Shigella* declined from 4.29 per 100,000 in 2015 to 3.92 per 100,000 in 2016. The decrease in incidence in *Shigella sonnei* was responsible for the overall decline, going from 3.64 per 100,000 in 2015 to 3.15 per 100,000 in 2016. *Shigella flexneri* saw an increase in incidence, from 0.37 per 100,000 in 2015, to 0.50 per 100,000 in 2016. Reporting of “Unknown” species of *Shigella* was down slightly from 0.26 per 100,000 in 2015 to 0.25 per 100,000 in 2016. *Shigella dysenteriae* had an incidence of infection of 0.01 per 100,000 this year. It was not seen in 2015. The incidence of infection of *Shigella boydii* remains unchanged from 2015 at 0.01 per 100,000.

Note: Full data table for graph https://www.cdc.gov/nationalsurveillance/data/shigella2016/LEDS_Shig_2016.xlsx

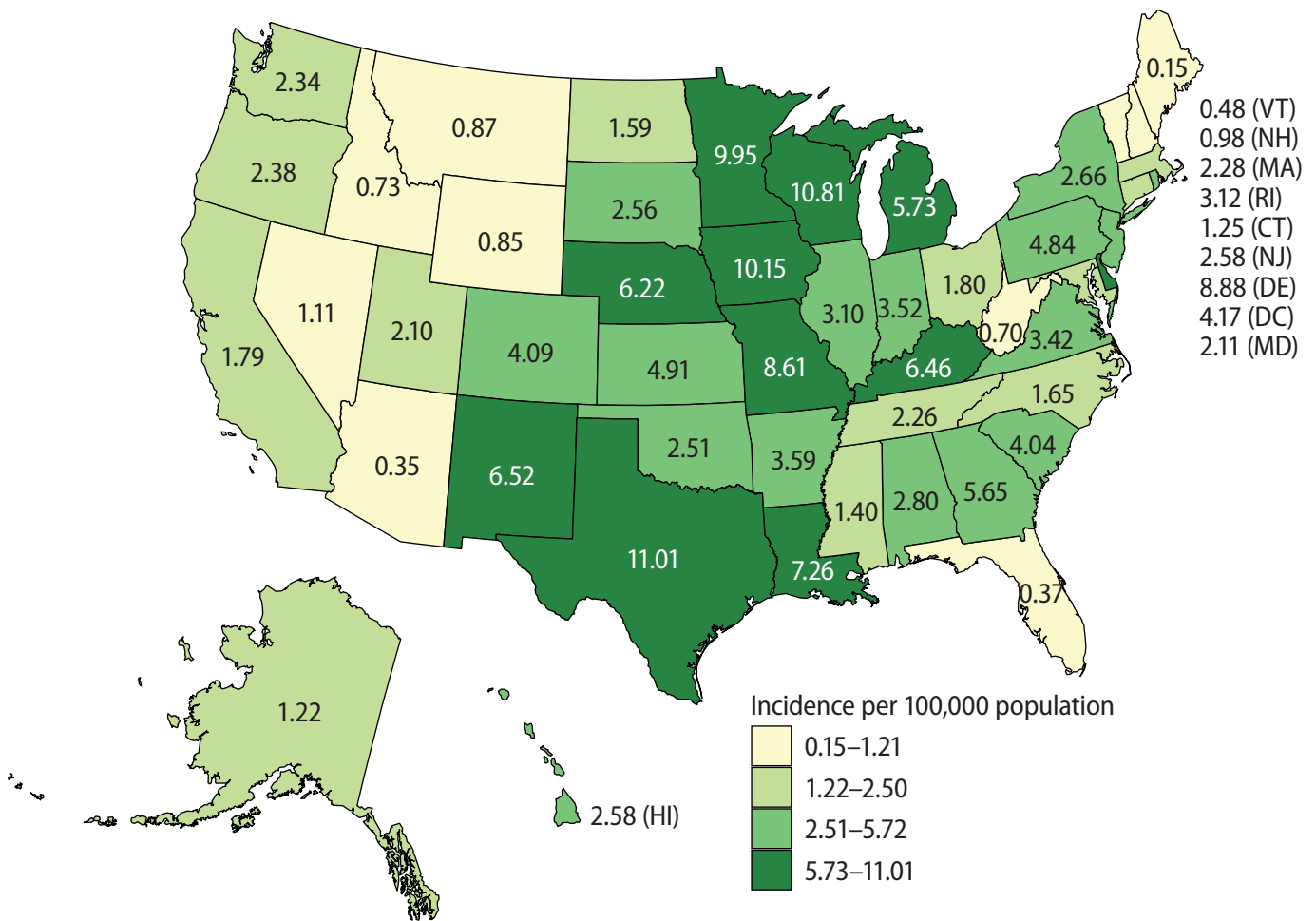
Table 1a. Culture-confirmed *Shigella* infections reported to LEDS, by species, United States, 2016

Species (by rank)	Number reported	Percent	Incidence (per 100,000)
1— <i>S. sonnei</i>	10,139	80.5	3.15
2— <i>S. flexneri</i>	1,592	12.6	0.5
3— <i>S. boydii</i>	30	0.2	<0.01
4— <i>S. dysenteriae</i>	18	0.1	<0.01
Subtotal	11,779	93.5	n/a
Unknown	818	6.5	n/a
Total	12,597	100	3.92

Table 1b. Incidence rate of culture-confirmed *Shigella* infections reported to LEDS, by age group, sex, United States, 2016 (n=11,521 with age and sex information reported)

Age group, years	Female (Incidents per 100, 000)	Male (Incidents per 100, 000)
<1	3.19	3.34
1–4	18.92	17.38
5–9	14.79	13.31
10–19	2.95	2.27
20–29	3.64	3.08
30–39	2.98	3.55
40–49	1.73	2.44
50–59	1.55	2.11
60–69	1.5	1.47
70–79	1.18	0.9
≥80	0.63	0.81
Overall	3.8	3.87

Figure 2a. Incidence rate of culture-confirmed *Shigella* infection reported to LEDS, by reporting jurisdiction, United States, 2016 (n=12,597)

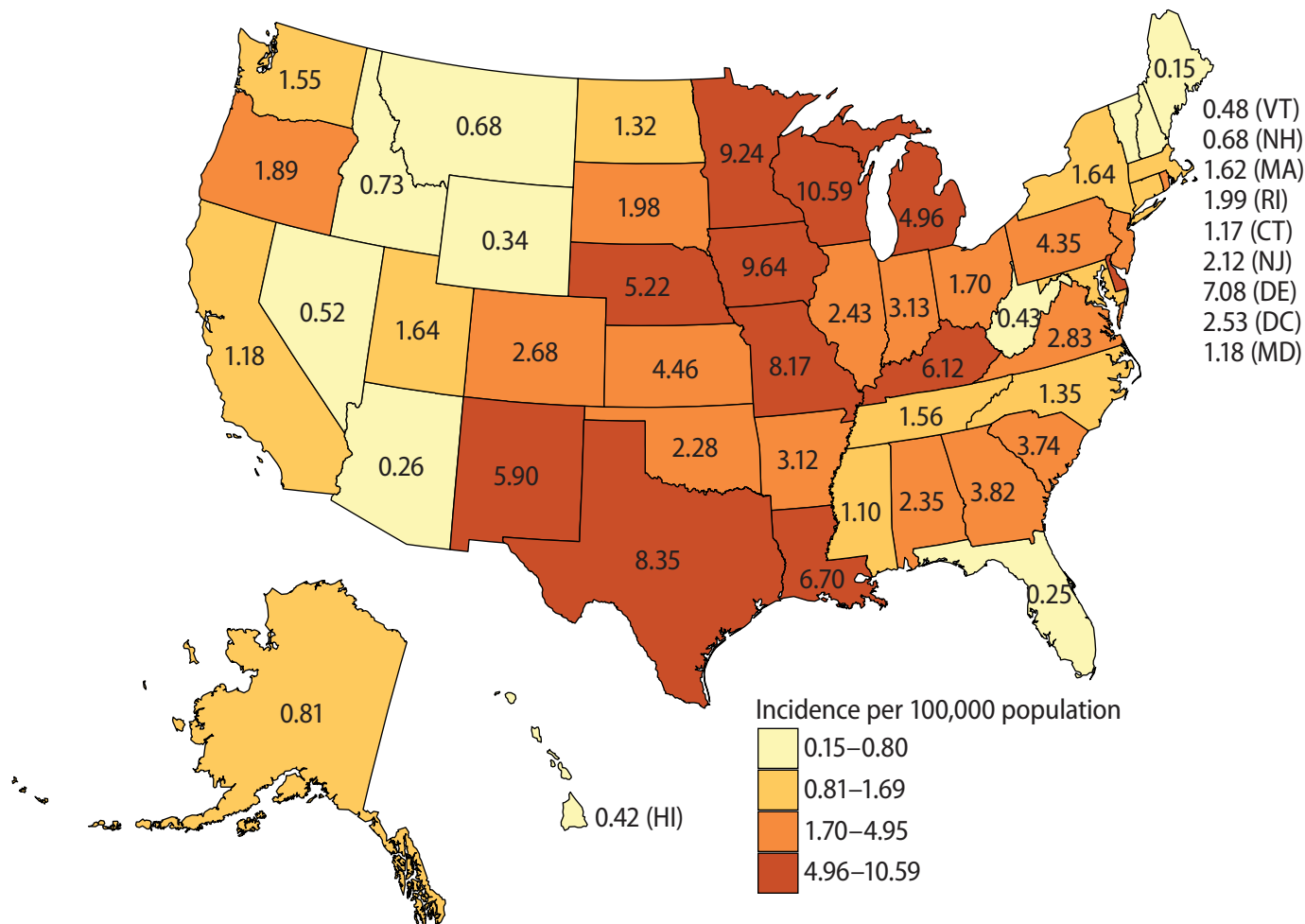


Incidence per 100,00 population listed per state:

Alaska—1.22, Alabama—2.8, Arkansas—3.59, Arizona—0.35, California—1.79, Colorado—4.09, Connecticut—1.25, District of Columbia—4.17, Delaware—8.88, Florida—0.37, Georgia—5.65, Hawaii—2.58, Iowa—10.15, Idaho—0.73, Illinois—3.1, Indiana—3.52, Kansas—4.91, Kentucky—6.46, Louisiana—7.26, Massachusetts—2.28, Maryland—2.11, Maine—0.15, Michigan—5.73, Minnesota—9.95, Missouri—8.61, Mississippi—1.4, Montana—0.87, North Carolina—1.65, North Dakota—1.59, Nebraska—6.22, New Hampshire—0.98, New Jersey—2.58, New Mexico—6.52, Nevada—1.11, New York—2.66, Ohio—1.8, Oklahoma—2.51, Oregon—2.38, Pennsylvania—4.84, Rhode Island—3.12, South Carolina—4.04, South Dakota—2.56, Tennessee—2.26, Texas—11.01, Utah—2.1, Virginia—3.42, Vermont—0.48, Washington—2.34, Wisconsin—10.81, West Virginia—0.7, Wyoming—0.85

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/shigella2016/all_fig2a.csv

Figure 2b. Incidence rate of culture-confirmed *Shigella sonnei* infection reported to LEDS, by reporting jurisdiction, United States, 2016 (n=10,139)

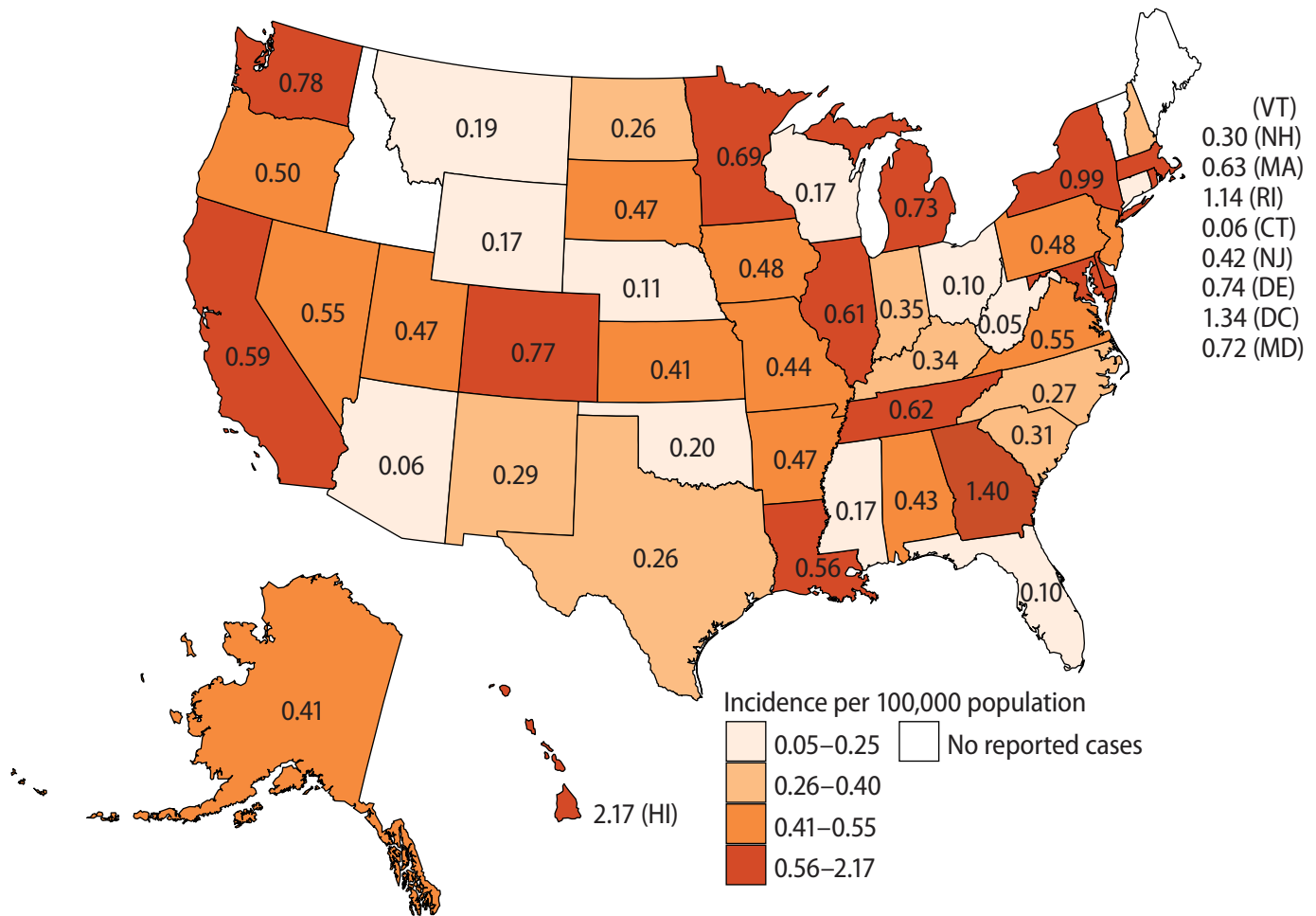


Incidence per 100,00 population for *Shigella sonnei* listed per state:

Alaska—0.81, Alabama—2.35, Arkansas—3.12, Arizona—0.26, California—1.18, Colorado—2.68, Connecticut—1.17, District of Columbia—2.53, Delaware—7.08, Florida—0.25, Georgia—3.82, Hawaii—0.42, Iowa—9.64, Idaho—0.73, Illinois—2.43, Indiana—3.13, Kansas—4.46, Kentucky—6.12, Louisiana—6.7, Massachusetts—1.62, Maryland—1.18, Maine—0.15, Michigan—4.96, Minnesota—9.24, Missouri—8.17, Mississippi—1.1, Montana—0.68, North Carolina—1.35, North Dakota—1.32, Nebraska—5.22, New Hampshire—0.68, New Jersey—2.12, New Mexico—5.9, Nevada—0.52, New York—1.64, Ohio—1.7, Oklahoma—2.28, Oregon—1.89, Pennsylvania—4.35, Rhode Island—1.99, South Carolina—3.74, South Dakota—1.98, Tennessee—1.56, Texas—8.35, Utah—1.64, Virginia—2.83, Vermont—0.48, Washington—1.55, Wisconsin—10.59, West Virginia—0.43, Wyoming—0.34

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/shigella2016/sonnei_fig2b.csv

Figure 2c. Incidence rate of culture-confirmed *Shigella flexneri* infection reported to LEDS, by reporting jurisdiction, United States, 2016 (n=1,592)



Incidence per 100,00 population for *Shigella flexneri* listed per state:

Alaska—0.41, Alabama—0.43, Arkansas—0.47, Arizona—0.06, California—0.59, Colorado—0.77, Connecticut—0.06, District of Columbia—1.34, Delaware—0.74, Florida—0.1, Georgia—1.4, Hawaii—2.17, Iowa—0.48, Idaho—NA, Illinois—0.61, Indiana—0.35, Kansas—0.41, Kentucky—0.34, Louisiana—0.56, Massachusetts—0.63, Maryland—0.72, Maine—NA, Michigan—0.73, Minnesota—0.69, Missouri—0.44, Mississippi—0.17, Montana—0.19, North Carolina—0.27, North Dakota—0.26, Nebraska—0.11, New Hampshire—0.3, New Jersey—0.42, New Mexico—0.29, Nevada—0.55, New York—0.99, Ohio—0.1, Oklahoma—0.2, Oregon—0.5, Pennsylvania—0.48, Rhode Island—1.14, South Carolina—0.31, South Dakota—0.47, Tennessee—0.62, Texas—0.26, Utah—0.47, Virginia—0.55, Vermont—NA, Washington—0.78, Wisconsin—0.17, West Virginia—0.05, Wyoming—0.17

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/shigella2016/flexneri_fig2c.csv

Figure 3. Percentage of culture-confirmed *Shigella* infections reported to LEDS, by month of specimen collection, United States, 2006–2016

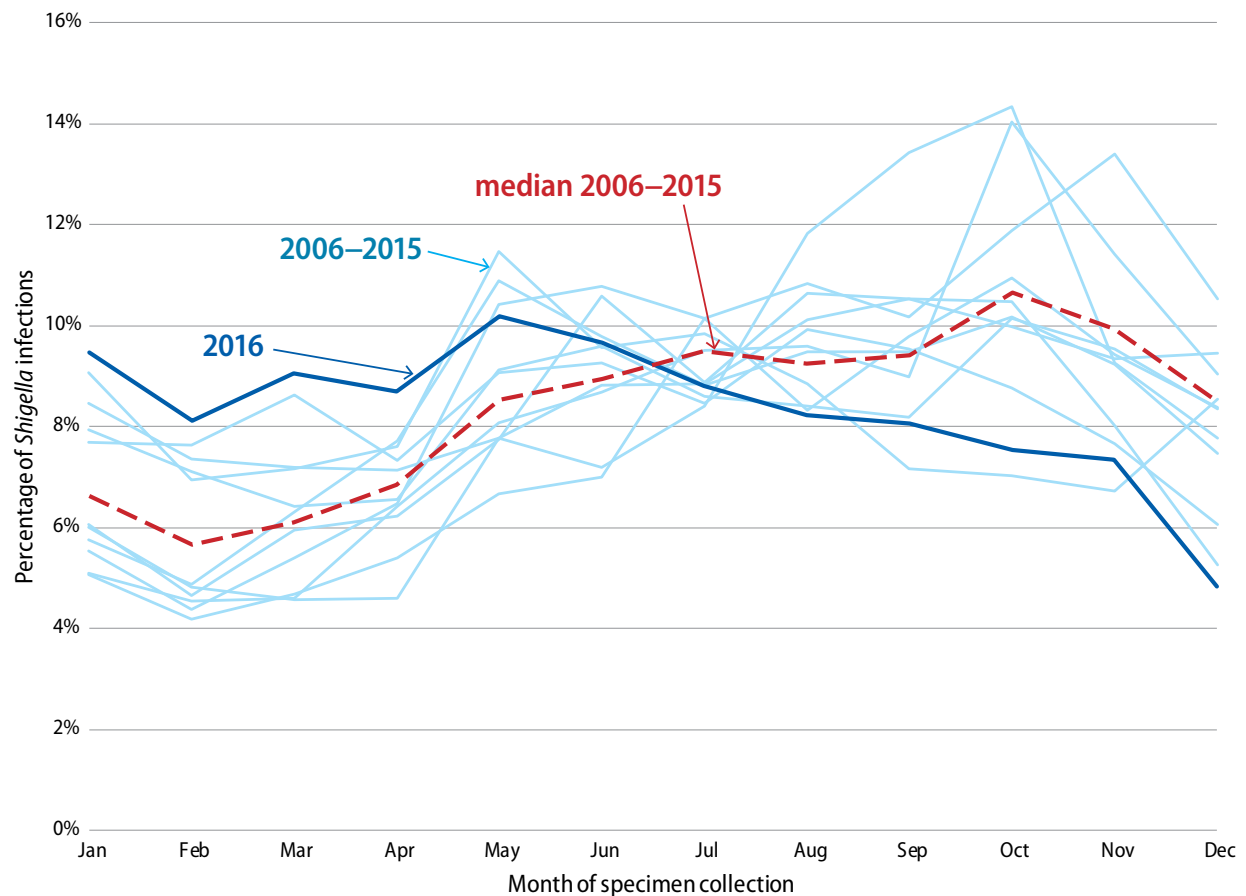


Figure 3 shows the distribution of case reporting by month of specimen collection, 2006–2016 and median trend line from 2006–2015. *Shigella* reporting for 2016 did not show any seasonality, consistent with previous years.

References

- Centers for Disease Control and Prevention (CDC). National *Shigella* Surveillance Overview. Atlanta, Georgia: US Department of Health and Human Services, CDC, 2012.
- Iwamoto, Martha, et al. Bacterial enteric infections detected by culture-independent diagnostic tests—FoodNet, United States, 2012–2014. *MMWR Morb Mortal Wkly Rep.* 2015 Mar 13;64(9):252–7. [PubMed](#).
- Marder EP, Cieslak PR, Cronquist AB, et al. Incidence and trends of infections with pathogens transmitted commonly through food and the effect of increasing use of culture-independent diagnostic tests on surveillance—Foodborne Diseases Active Surveillance Network, 10 U.S. Sites, 2013–2016. *MMWR Morb Mortal Wkly Rep.* 2017 Apr 21;66(15):397–403. [DOI PubMed](#).

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Other Sources of National *Shigella* Surveillance Data

National Notifiable Diseases Surveillance System (NNDSS)

The National Notifiable Disease Surveillance System (NNDSS) collects and compiles reports of nationally notifiable infectious diseases, including shigellosis. Shigellosis cases are not currently reported by species in NNDSS.

Annual reports: http://www.cdc.gov/mmwr/mmwr_nd/index.html

Data: <https://data.cdc.gov/browse?category=NNDSS>

National Antimicrobial Resistance Monitoring System (NARMS)

The National Antimicrobial Resistance Monitoring System (NARMS) Annual Human Isolates Report includes antimicrobial resistance data on enteric bacteria (including *Shigella*) isolated from humans.

Annual reports: <https://www.cdc.gov/narms/reports/index.html>

Data: <https://wwwn.cdc.gov/narmsnow/>

Foodborne Diseases Active Surveillance Network (FoodNet)

The Foodborne Diseases Active Surveillance Network (FoodNet) conducts surveillance for enteric diseases (including shigellosis) diagnosed by laboratory testing of samples from patients. The catchment area comprises Connecticut, Georgia, Maryland, Minnesota, New Mexico, Oregon, Tennessee and selected counties in California, Colorado, and New York.

Annual reports: <https://www.cdc.gov/foodnet/reports/index.html>

Data: <https://wwwn.cdc.gov/foodnetfast/>

National Outbreak Reporting System (NORS)

The National Outbreak Reporting System (NORS) is a web-based platform used by local, state, and territorial health departments in the United States to report waterborne and foodborne disease outbreaks and enteric disease outbreaks transmitted by contact with environmental sources, infected persons or animals, or unknown modes of transmission to CDC.

Annual reports—

Foodborne: <https://www.cdc.gov/foodsafety/fdoss/data/annual-summaries/index.html>

Drinking water-associated outbreaks: <https://www.cdc.gov/healthywater/surveillance/drinking-surveillance-reports.html>

Recreational water-associated outbreaks: <https://www.cdc.gov/healthywater/surveillance/rec-water-surveillance-reports.html>

Outbreaks associated with environmental and undetermined exposures to water: <https://www.cdc.gov/healthywater/surveillance/environmental/envirion-water-surveillance-reports.html>

Data—

Foodborne: <https://wwwn.cdc.gov/foodborneoutbreaks/>

NCEZID Atlanta:

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30329-4027 MS C-09

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National Enteric Disease Surveillance: *Shigella* Annual Report Appendices, 2016

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Appendices

Appendix 1. Culture-confirmed <i>Shigella</i> infections reported to LEDS by species, age group, and sex, 2016	11
Appendix 2a. Culture-confirmed <i>Shigella</i> infections reported to LEDS by serotype and reporting jurisdiction, 2016(Alaska to Kansas).	14
Appendix 2b. Culture-confirmed <i>Shigella</i> infections reported to LEDS by serotype and reporting jurisdiction, 2016(Kentucky to Nevada)	15
Appendix 2c. Culture-confirmed <i>Shigella</i> infections reported to LEDS by serotype and reporting jurisdiction, 2016 (New York to Wyoming)	16
Appendix 3. Culture-confirmed <i>Shigella</i> infections reported to LEDS by species, serotype, and year, 2006–2016	17

Appendix 1. Culture-confirmed *Shigella* infections reported to LEDS by species, age group, and sex, 2016

All *Shigella*

Age Group (years)	Female	Male	Sex Unknown	Total
<1	62	68	12	142
1–4	1,473	1,415	53	2,941
5–9	1,483	1,392	48	2,923
10–19	602	484	19	1,105
20–29	806	711	27	1,544
30–39	625	747	16	1,388
40–49	358	496	9	863
50–59	350	455	8	813
60–69	276	245	10	531
70–79	126	80	1	207
≥80	47	37	3	87
Unknown	21	14	18	53
Total	6,229	6,144	224	12,597

S. boydii

Age Group (years)	Female	Male	Sex Unknown	Total
<1	62	68	12	142
1–4	1,473	1,415	53	2,941
5–9	1,483	1,392	48	2,923
10–19	602	484	19	1,105
20–29	806	711	27	1,544
30–39	625	747	16	1,388
40–49	358	496	9	863
50–59	350	455	8	813
60–69	276	245	10	531
70–79	126	80	1	207
≥80	47	37	3	87
Unknown	21	14	18	53
Total	6,229	6,144	224	12,597

S. dysenteriae

Age Group (years)	Female	Male	Sex Unknown	Total
<1	0	0	2	2
1-4	2	1	0	3
5-9	1	0	0	1
10-19	0	0	0	0
20-29	3	0	0	3
30-39	0	0	0	0
40-49	3	0	0	3
50-59	3	0	0	3
60-69	2	0	0	2
70-79	1	0	0	1
≥80	0	0	0	0
Unknown	0	0	0	0
Total	15	1	2	18

S. flexneri

Age Group (years)	Female	Male	Sex Unknown	Total
<1	6	6	5	17
1-4	61	53	2	116
5-9	46	55	4	105
10-19	34	50	2	86
20-29	33	308	8	349
30-39	30	275	7	312
40-49	27	206	6	239
50-59	33	206	2	241
60-69	27	68	4	99
70-79	8	9	0	17
≥80	1	4	1	6
Unknown	1	1	3	5
Total	307	1,241	44	1,592

S. sonnei

Age Group (years)	Female	Male	Sex Unknown	Total
<1	49	57	4	110
1-4	1,297	1,261	50	2,608
5-9	1,331	1,218	44	2,593
10-19	528	405	17	950
20-29	731	369	19	1,119
30-39	552	435	9	996
40-49	302	262	3	567
50-59	290	224	6	520
60-69	230	162	5	397
70-79	104	60	1	165
≥80	36	28	2	66
Unknown	20	13	15	48
Total	5,470	4,494	175	10,139

Unknown

Age Group (years)	Female	Male	Sex Unknown	Total
<1	7	5	0	12
1-4	112	98	1	211
5-9	104	119	0	223
10-19	39	28	0	67
20-29	34	32	0	66
30-39	41	36	0	77
40-49	22	27	0	49
50-59	23	24	0	47
60-69	16	14	0	30
70-79	12	10	0	22
≥80	10	4	0	14
Unknown	0	0	0	0
Total	420	397	1	818

Appendix 2a. Culture-confirmed *Shigella* infections reported to LEDS by serotype and reporting jurisdiction, 2016(Alaska to Kansas).

Cells with no numbers indicate no reported cases of that serotype for 2016. The key to state name abbreviations can be found at http://www.census.gov/geo/reference/ansi_statetables.html.

Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
<i>boydii</i> 1																	
<i>boydii</i> 2																	
<i>boydii</i> 4																	
<i>boydii</i> 12																	
<i>boydii</i> 18																	
<i>boydii</i> 20					1												
<i>boydii</i> unspecified						2	1						1			1	
<i>dysenteriae</i> 1																	
<i>dysenteriae</i> 2					1												
<i>dysenteriae</i> 3																	
<i>dysenteriae</i> 4					1												
<i>dysenteriae</i> 7																	
<i>dysenteriae</i> 8																	
<i>dysenteriae</i> 9																	
<i>dysenteriae</i> unspecified				2	1											2	
<i>flexneri</i> 1a					1						6				1		
<i>flexneri</i> 1b											19				35		
<i>flexneri</i> 1 unspecified		1			55	5						6					
<i>flexneri</i> 2a					39						76				28		
<i>flexneri</i> 2b					2						1						
<i>flexneri</i> 2 unspecified		16			1	8	2				1	16					
<i>flexneri</i> 3a					1						15				2		
<i>flexneri</i> 3b					7						2				6		
<i>flexneri</i> 3 unspecified		1			10	15						5					
<i>flexneri</i> 4a											9				2		
<i>flexneri</i> 4b																	
<i>flexneri</i> 4 unspecified		3			6	4											
<i>flexneri</i> 6					4	1											
<i>flexneri</i> 88-893					45							2					
<i>flexneri</i> unspecified	3	1	14	4	61	7		8	7	18	1		17			23	12
<i>flexneri</i> variant x																	
<i>flexneri</i> variant y											11	2			5		
<i>sonnei</i>	6	115	95	18	459	145	41	17	63	48	390	6	320	13	282	206	73
Unknown					6	33		2	10	2	44				8		
Total	9	137	109	24	701	220	44	27	80	68	575	37	338	13	369	232	85

Appendix 2b. Culture-confirmed *Shigella* infections reported to LEDS by serotype and reporting jurisdiction, 2016(Kentucky to Nevada)

Cells with no numbers indicate no reported cases of that serotype for 2016. The key to state name abbreviations can be found at http://www.census.gov/geo/reference/ansi_statetables.html.

Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
<i>boydii</i> 1															1		
<i>boydii</i> 2																	
<i>boydii</i> 4																	
<i>boydii</i> 12															1		
<i>boydii</i> 18																	
<i>boydii</i> 20																	
<i>boydii</i> unspecified				2		2										1	
<i>dysenteriae</i> 1															1		
<i>dysenteriae</i> 2																	
<i>dysenteriae</i> 3																	
<i>dysenteriae</i> 4																	
<i>dysenteriae</i> 7											1						
<i>dysenteriae</i> 8											1						
<i>dysenteriae</i> 9											1						
<i>dysenteriae</i> unspecified						1	1		1								
<i>flexneri</i> 1a			1			2											
<i>flexneri</i> 1b			9	1		6					4						1
<i>flexneri</i> 1 unspecified								7							8		3
<i>flexneri</i> 2a			13	11		46					9						8
<i>flexneri</i> 2b			2														
<i>flexneri</i> 2 unspecified								10							10		
<i>flexneri</i> 3a			4	2		3					3						
<i>flexneri</i> 3b			2	2		1											
<i>flexneri</i> 3 unspecified								10							11		
<i>flexneri</i> 4a			6								3						
<i>flexneri</i> 4b																	1
<i>flexneri</i> 4 unspecified				6		8		1			3				3		
<i>flexneri</i> 6				5		2									4		
<i>flexneri</i> 88-893			4														
<i>flexneri</i> unspecified	16	26		12		1	38	2	5	2	3	2	1	3		6	2
<i>flexneri</i> variant x			1														
<i>flexneri</i> variant y			1	2		2					3						1
<i>sonnei</i>	272	313	113	70	2	493	504	557	33	7	129	10	93	9	186	123	15
Unknown			2	11		2		1	4				17			6	1
Total	288	339	158	124	2	569	543	588	43	9	160	12	111	12	225	136	32

Appendix 2c. Culture-confirmed *Shigella* infections reported to LEDS by serotype and reporting jurisdiction, 2016 (New York to Wyoming)

Cells with no numbers indicate no reported cases of that serotype for 2016. The key to state name abbreviations can be found at http://www.census.gov/geo/reference/ansi_statetables.html.

Serogroup	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
<i>boydii</i> 1																	
<i>boydii</i> 2												1					
<i>boydii</i> 4														1			
<i>boydii</i> 12																	
<i>boydii</i> 18					1												
<i>boydii</i> 20																	
<i>boydii</i> unspecified	4				1			1	2	4					1	1	
<i>dysenteriae</i> 1																	
<i>dysenteriae</i> 2																	
<i>dysenteriae</i> 3												1					
<i>dysenteriae</i> 4																	
<i>dysenteriae</i> 7																	
<i>dysenteriae</i> 8																	
<i>dysenteriae</i> 9																	
<i>dysenteriae</i> unspecified	2									1							
<i>flexneri</i> 1a				2										2			
<i>flexneri</i> 1b				2										3			
<i>flexneri</i> 1 unspecified			1		6									13			
<i>flexneri</i> 2a				10										27			
<i>flexneri</i> 2b														1			
<i>flexneri</i> 2 unspecified					4												
<i>flexneri</i> 3a				2													
<i>flexneri</i> 3b				1										3			
<i>flexneri</i> 3 unspecified			1							1							
<i>flexneri</i> 4a				1										1			
<i>flexneri</i> 4b																	
<i>flexneri</i> 4 unspecified			3		1									3			
<i>flexneri</i> 6																	
<i>flexneri</i> 88-893				1													
<i>flexneri</i> unspecified	198	13	2	1	51	12	15	4	39	70	15	50			11	1	
<i>flexneri</i> variant x																	
<i>flexneri</i> variant y									1					3			
<i>sonnei</i>	322	195	87	76	567	21	183	17	102	2,291	50	246	3	110	633	8	2
Unknown	1		1						3	655					2	5	2
Total	527	208	95	96	631	33	198	22	147	3,022	65	298	3	167	647	15	4

Appendix 3. Culture-confirmed *Shigella* infections reported to LEDS by species, serotype, and year, 2006–2016

Cells with no numbers indicate no reported cases of that serotype for 2016. The key to state name abbreviations can be found at http://www.census.gov/geo/reference/ansi_statetables.html.

*S. boydii*¹

Serotype	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
<i>boydii</i> 1	9	3	11	5	3	5	2			2	1	41
<i>boydii</i> 2	15	14	14	15	18	17	14	4		3	1	115
<i>boydii</i> 3							1					1
<i>boydii</i> 4	3	1	16	7	7	4	4	4		1	1	48
<i>boydii</i> 5		2		1		1			4			8
<i>boydii</i> 7								1				1
<i>boydii</i> 8	1	3	1	1	1	4	1	1		1		14
<i>boydii</i> 9				3								3
<i>boydii</i> 10	1		1	2	1	2	1		4	1		13
<i>boydii</i> 11				1								1
<i>boydii</i> 12	2	2	3	1	2	2		1			1	14
<i>boydii</i> 13		1						1	1			3
<i>boydii</i> 14	6	7		5	3	3	1	2	1	2		30
<i>boydii</i> 16					2							2
<i>boydii</i> 18	2		1	1					1		1	6
<i>boydii</i> 19				2	1		1					4
<i>boydii</i> 20		1	3	3	1	1	11	3	2	2	1	28
<i>boydii</i> unspecified	75	28	29	19	34	44	32	30	22	26	24	363
Subtotal	114	62	79	66	73	83	68	47	35	38	30	695

¹*Shigella boydii* serotype 13 is more appropriately classified as *Escherichia albertii*. These bacteria do not have the virulence genes associated with Enteroinvasive *Escherichia coli* (EIEC) and *Shigella* and are genetically separable from *Escherichia coli* and *Shigella* spp.

S. dysenteriae

Serotype	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
<i>dysenteriae</i> 1	2	3	1			1			1		1	9
<i>dysenteriae</i> 2	4	4	7	8	5	2	2	4		5	1	42
<i>dysenteriae</i> 3	2	3	1	1	2	1	1				1	12
<i>dysenteriae</i> 4	3	1	4	6			2		1		1	18
<i>dysenteriae</i> 6				1								1
<i>dysenteriae</i> 7	1				1						1	3
<i>dysenteriae</i> 8				1		1					1	3
<i>dysenteriae</i> 9				2							1	3
<i>dysenteriae</i> 11									1			1
<i>dysenteriae</i> 12	2		1	1	3		2		1			10
<i>dysenteriae</i> 13	1			1				1				3
<i>dysenteriae</i> 3162-96			2		1							3
<i>dysenteriae</i> unspecified	31	12	13	17	21	7	21	11	13	9	11	166
Subtotal	46	23	29	38	33	12	28	16	17	14	18	274

S. flexneri

Serotype	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
<i>flexneri 1a</i>	12	13	18	13	13	4	5	7	6	9	15	115
<i>flexneri 1b</i>	38	52	43	75	61	74	70	50	58	70	80	671
<i>flexneri 1 unspecified</i>	102	93	100	60	47	39	66	32	27	48	105	719
<i>flexneri 2a</i>	107	123	120	176	125	151	97	139	162	191	267	1,658
<i>flexneri 2b</i>	21	23	13	14	10	2	3	3	2	6	6	103
<i>flexneri 2 unspecified</i>	152	99	174	134	100	92	82	87	67	70	68	1,125
<i>flexneri 3a</i>	38	33	16	53	39	29	26	20	26	36	32	348
<i>flexneri 3b</i>	7	14	12	21	22	17	33	32	36	25	24	243
<i>flexneri 3 unspecified</i>	67	48	61	54	49	36	30	60	79	59	54	597
<i>flexneri 4a</i>	37	49	45	55	50	44	25	33	32	29	22	421
<i>flexneri 4b</i>	5	1		2	1		1	1	4	1	1	17
<i>flexneri 4c</i>		1	2	1	1			1		1		7
<i>flexneri 4 unspecified</i>	54	45	65	59	50	30	41	43	32	56	41	516
<i>flexneri 5a</i>			2	1	2	2		1				8
<i>flexneri 5b</i>	1											1
<i>flexneri 5 unspecified</i>	2	2	3	11	2	2		1		1		24
<i>flexneri 6</i>	61	30	45	25	32	30	20	18	19	20	16	316
<i>flexneri 88-893</i>	1	4	4	3	7	5	7	4	4	2	52	93
<i>flexneri unspecified</i>	738	342	356	274	383	380	478	515	548	542	777	5,333
<i>flexneri variant x</i>	3	6		7	5	5	4	1	6	1	1	39
<i>flexneri variant y</i>	22	30	16	34	20	27	27	26	27	33	31	293
Subtotal	1,468	1,008	1,095	1,072	1,019	969	1,015	1,074	1,135	1,200	1,592	12,647

S. sonnei

Serotype	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
<i>sonnei</i>	7,426	8,239	11,270	8,172	7,116	5,345	6,349	5,794	9,332	11,700	10,139	90,882

Unknown

Serotype	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
Unknown	1,178	1,337	2,262	797	668	615	941	524	432	832	818	10,404

All Species Total

Serotype	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Total
TOTAL OF ALL	9,054	9,332	12,473	9,348	8,241	6,409	7,460	6,931	10,519	12,952	11,779	104,498

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