Shigella

Annual Summary

2002

Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for Infectious Diseases
Division of Bacterial and Mycotic Diseases
Foodborne and Diarrheal Diseases Branch
Atlanta, Georgia 30333

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Laboratory-Confirmed *Shigella* Surveillance Annual Summary, 2002

The Annual Summary contains surveillance data on reported laboratory-confirmed *Shigella* isolates in the United States. The National *Shigella* Surveillance System collects reports of isolates of *Shigella* from every state in the United States. This information is reported electronically through the Public Health Laboratory Information System (PHLIS) by the State Public Health Laboratory Directors and State and Territorial Epidemiologists to the Foodborne and Diarrheal Diseases Branch (FDDB) and the Biostatistics and Information Management Branch (BIMB) of the Division of Bacterial and Mycotic Diseases in the National Center for Infectious Diseases.

The National *Shigella* Surveillance System is based on data collected by state and territorial public health laboratories. *Shigella* isolates are submitted to the state public health laboratory by clinical diagnostic laboratories. The state and territorial laboratories confirm the isolates as *Shigella,* perform subtyping, and submit the data for reporting through PHLIS. Unusual or untypable isolates are forwarded to the National *Shigella* Reference Laboratory at the Centers for Disease Control and Prevention for further characterization or confirmation. These results are reported back to the state laboratory, where they are reported to CDC through PHLIS.

The capture of isolates in the National *Shigella* Surveillance System is considered to be consistent. However, some *Shigella* isolates may not be forwarded or reported to state public health laboratories and therefore are not captured. In addition, irrespective of the surveillance system, many cases of *Shigella* illness are not reported because the ill person does not seek medical care, the health-care provider does not obtain a specimen for diagnosis or the laboratory does not perform culture for *Shigella*. The results of surveillance reported herein are therefore substantial underestimates of the true number of infections.

The number of isolates reported by state represents the state where laboratory confirmation and subtyping were performed. In some instances, the reporting state is not the same as the state of residence of the person from whom the isolate was obtained. For the Annual Summaries, duplicate records are deleted.

There are 4 major subgroups and 43 recognized serotypes of *Shigella,* shown in Table A below.

Table A. Subgroups, Serotypes and Subtypes of *Shigella*

Subgroups	**Serotypes and Subtypes**
Group A: *Shigella dysenteriae*	15 serotypes (type 1 produces Shiga toxin)
Group B: *Shigella flexneri*	8 serotypes and 9 subtypes
Group C: *Shigella boydii*	19 serotypes
Group D: *Shigella sonnei*	1 serotype

These subgroups and serotypes are differentiated from one another by their biochemical traits (such as ability to ferment mannitol) and antigenic properties (Table B).

Table B. Classification of *Shigella* subgroups.

			Carbohydrate fermentation		
Species	**Group**	**Serotypes**	**Glucose**	**Mannitol**	**Lactose**
S. dysenteriae	A	15	+	-	-
S. flexneri	B	8	+	+	-
S. boydii	C	19	+	+	-
S. sonnei	D	1	+	+	Late

Subgroups A, B, C and D represent serologically and biochemically defined groups of shigellae that historically have been treated as species: subgroup A for *S. dysenteriae*; subgroup B for *S. flexneri*; subgroup C for *S. boydii* and subgroup D for *S. sonnei*. Since there are no recognized environmental or animal reservoirs for *Shigella*, except higher primates, the isolates reported herein are all from infected humans.

The Statistical Outbreak Detection Algorithm (SODA), developed by BIMB and FDDB, is a statistical algorithm based on the National Surveillance Data. It is designed to detect unusual clusters of *Salmonella* and *Shigella* infection. SODA compares current *Salmonella* and *Shigella* isolates reported through PHLIS by subgroup or serotype with a 5 year historical baseline for that subgroup or serotype for the specified time period to detect unusual increases from the baseline. Analyses can be conducted at state, regional, or national levels. Since 1996, SODA has been implemented at CDC and selected state health departments. If you would like more information on SODA, please call the PHLIS Helpdesk (404) 639-3365.

Annual Highlights for 2002

A total of 12,992 *Shigella* isolates were reported from public health laboratories in 50 states in 2002 (Table 1). This represents a 13% decrease compared with 1992 and a 22% increase from 2001. The national rate of reported *Shigella* isolates in 2002 was 4.5 per 100,000 population based on 2002 census population estimate figures for the United States.

Similar to previous years, *Shigella* was isolated frequently from children under 5 years of age, who accounted for 29.7% of all isolates. About 32.3% of all isolates came from persons aged 5-19 years, and 30.7% from persons aged 20-59, with declining numbers thereafter. The median age of patients by subgroup is shown in Table 4. The distribution of *Shigella* isolates between the sexes was similar, with females accounting for 51.7% of persons from whom *Shigella* was isolated. Gender differences were most notable for a preponderance of females in three age groups, 20-29 (65.2%), 70-79 (60.8%), and 60-69 (57.1%) and for a relative paucity of females in three age groups 40-49 (43.9%), 30-39 (47.5%), and 80+ (47.9%). These gender differences reflect similar findings among reported isolates of *Shigella sonnei*. Among reported isolates of *Shigella flexneri*, a male predominance is seen, particularly in the age groups 30-39 (68.9%), 40-49 (67.1%) and 20-29 (55.3%). These estimates, however, are not complete since Illinois does not report age of persons from whom *Shigella* isolates are

obtained.

The frequency of reported subgroups, and the frequency of reported serotypes within these groups for all *Shigella* isolates are shown in Tables 1 and 2. Of the 12,992 isolates, 12,517 (96.3%) were subgrouped. Trends of subgroups remained constant, with subgroup D (*S. sonne*i) accounting for the largest percentage of isolates (83.5%), followed by subgroup B (*S.flexneri,* 12.2%), *subgroup C (S. boydii,* 0.8%) and subgroup A (*S. dysenteriae*,0.3%). *Shigella* isolate serotype trends by year are shown in Table 5 and in Figure 2. Over the past decade, the numbers of reported *Shigella* isolates in subgroups A, B and C, and the proportions of all reported *Shigella* isolates due to these three subgroups have enjoyed a steady decline. The decrease over time in reported isolates of *Shigella* subgroup D (*S. sonnei*) has been less smooth, and subgroup D now accounts for a greater proportion of all reported *Shigella* isolates (83.5%) than in any year since 1968, when National Shigella Surveillance began. The number (475) and the proportion (3.7%)of all reported *Shigella* isolates that were not identified as belonging to a specific subgroup have also declined to new historic lows. The highest numbers and proportions of all reported Shigella isolates that were not identified as belonging to a specific subgroup were reported by California (396, 14.4%), Colorado (21, 10.0%), and Tennessee (14, 7.4%).

Shigella transmission occurs via the fecal-oral route. The majority of subgroup D (*S. sonnei)* infections in the United States occur in young children and are associated with crowding and poor personal hygiene. Daycare centers have been implicated in many large *S. sonne*i outbreaks that can last many months and affect many persons (1,2). In 2002, a prolonged multi-state daycare-associated outbreak of *S. sonnei* infections in the South and Mid-Atlantic regions contributed significantly to the national burden of culture-confirmed shigellosis (3). *S. sonne*i has also been transmitted through unchlorinated wading pools (4), interactive water fountains (5), food items such as parsley (6) and bean dip (7), and men who have sex with men (MSM) (8). Until recently, the dominant subgroup causing illness among MSM was subgroup B (*S. flexneri)* (9). However, in a large outbreak among MSM in San Francisco, the dominant serotype was subgroup D (*S. sonnei)* (8).

Geographic trends by region for subgroup D (*S. sonnei)* isolates from 1988 to 2002 are illustrated in Figure 3. All regions except the West North Central, East North Central, and East South Central regions exhibited increases in subgroup D *(S. sonnei)* isolates from 2001 to 2002.

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TABLE 1

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup in 2002

Rank	Serotype	Reported	Percent
1	*S. sonnei*	10851	83.5
2	*S. flexneri*	1523	11.7
3	*S. boydii*	100	0.8
4	*S. dysenteriae*	43	0.3
	Sub Total	**12517**	**96.3**
	Unknown	475	3.7
	Sub Total	**475**	**3.7**
	Total	**12992**	**100.0**

TABLE 2

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup and Serotype in 2002

Rank	Serotype	Reported	Percent
1	*S. sonnei*	10851	83.5
2	*S. flexneri* unspecified	734	5.7
3	*S. flexneri* 2 unspecified	183	1.4
4	*S. flexneri* 1 unspecified	110	0.9
5	*S. flexneri* 2a	101	0.8
6	*S. flexneri* 4 unspecified	74	0.6
7	*S. flexneri* 3 unspecified	70	0.5
8	*S. flexneri* 6	59	0.5
9	*S. boydii* unspecified	53	0.4
10	*S. flexneri* 4a	53	0.4
11	*S. flexneri* 3a	51	0.4
12	*S. dysenteriae* unspecified	23	0.2
13	*S. flexneri* 1b	23	0.2
14	*S. boydii* 2	22	0.2
15	*S. flexneri* 2b	14	0.1
16	*S. flexneri* 3b	13	0.1
17	*S. boydii* 4	10	0.1
18	*S. flexneri* 1a	9	0.1
19	*S. flexneri* 5 unspecified	9	0.1
20	*S. flexneri* variant y	8	0.1
21	*S. boydii* 1	7	0.1
22	*S. dysenteriae* 2	5	0.0
23	*S. dysenteriae* 4	5	0.0
24	*S. flexneri* 4b	5	0.0
25	*S. flexneri* variant x	4	0.0
26	*S. dysenteriae* 9	3	0.0
27	*S. flexneri* 3c	3	0.0
28	*S. boydii* 10	2	0.0
29	*S. boydii* 12	2	0.0
30	*S. boydii* 6	2	0.0
31	*S. dysenteriae* 10	2	0.0
32	*S. dysenteriae* 8	2	0.0
33	*S. boydii* 14	1	0.0
34	*S. boydii* 18	1	0.0
35	*S. dysenteriae* 1	1	0.0
36	*S. dysenteriae* 3	1	0.0
37	*S. dysenteriae* 5	1	0.0
	Sub Total	**12517**	**96.4**
	Unknown	475	3.7
	Sub Total	**475**	**3.7**
	Total	**12992**	**100.1**

TABLE 3

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, Age Group and Sex, 2002

		Sex			
Subgroup	**Age Group**	**Female**	**Male**	**Unknown**	**Total**
All *Shigella*	< 1 Year	137	142	14	293
	1 to 4 Years	1665	1796	105	3566
	5 to 9 Years	1298	1192	68	2558
	10 to 19 Years	566	464	27	1057
	20 to 29 Years	771	411	34	1216
	30 to 39 Years	542	598	30	1170
	40 to 49 Years	301	385	10	696
	50 to 59 Years	213	163	6	382
	60 to 69 Years	112	84	4	200
	70 to 79 Years	62	40	3	105
	80+ Years	23	15		38
	Unknown Age	567	553	591	1711
	Total	**6257**	**5843**	**892**	**12992**
S. boydii	< 1 Year		2		2
	1 to 4 Years	10	12	1	23
	5 to 9 Years	9	3		12
	10 to 19 Years	6	3		9
	20 to 29 Years	11	2		13
	30 to 39 Years	7	4		11
	40 to 49 Years	2	8	1	11
	50 to 59 Years	2	4		6
	60 to 69 Years	4	2		6
	70 to 79 Years		1		1
	80+ Years	1			1
	Unknown Age	2	2	1	5
	Total	**54**	**43**	**3**	**100**
S. dysenteriae	1 to 4 Years	1	8	1	10
	5 to 9 Years	1	5		6
	10 to 19 Years	1			1
	20 to 29 Years	2	2		4
	30 to 39 Years	4	2		6
	40 to 49 Years	2	3		5
	50 to 59 Years	2			2
	60 to 69 Years	2	1		3
	70 to 79 Years	2			2
	80+ Years	1			1
	Unknown Age	1	2		3
	Total	**19**	**23**	**1**	**43**
S. flexneri	< 1 Year	12	17	1	30
	1 to 4 Years	164	184	10	358
	5 to 9 Years	85	84	5	174
	10 to 19 Years	46	47	3	96
	20 to 29 Years	87	110	9	206
	30 to 39 Years	66	146	7	219
	40 to 49 Years	51	104	2	157

TABLE 3

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, Age Group and Sex, 2002

		Sex			
Subgroup	**Age Group**	**Female**	**Male**	**Unknown**	**Total**
	50 to 59 Years	31	38	2	71
	60 to 69 Years	19	18	1	38
	70 to 79 Years	13	9		22
	80+ Years	1	1		2
	Unknown Age	48	68	34	150
	Total	**623**	**826**	**74**	**1523**
S. sonnei	< 1 Year	118	120	13	251
	1 to 4 Years	1425	1521	90	3036
	5 to 9 Years	1162	1061	63	2286
	10 to 19 Years	492	390	23	905
	20 to 29 Years	639	275	23	937
	30 to 39 Years	437	420	23	880
	40 to 49 Years	227	253	7	487
	50 to 59 Years	164	115	3	282
	60 to 69 Years	81	58	3	142
	70 to 79 Years	43	26	3	72
	80+ Years	16	11		27
	Unknown Age	514	477	555	1546
	Total	**5318**	**4727**	**806**	**10851**
Unknown	< 1 Year	7	3		10
	1 to 4 Years	65	71	3	139
	5 to 9 Years	41	39		80
	10 to 19 Years	21	24	1	46
	20 to 29 Years	32	22	2	56
	30 to 39 Years	28	26		54
	40 to 49 Years	19	17		36
	50 to 59 Years	14	6	1	21
	60 to 69 Years	6	5		11
	70 to 79 Years	4	4		8
	80+ Years	4	3		7
	Unknown Age	2	4	1	7
	Total	**243**	**224**	**8**	**475**

TABLE 4

Median Age of persons from whom laboratory confirmed Shigella isolates were reported to the CDC by Subgroup and Year for 1988-2002

	Year														
Serotype	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
S. boydii	22	24	10	21	18	20	20	15	10	19	22	8	26	26	22
S. dysenteriae	29	29	20	20	26	29	26	30	26	19	36	29	11	29	29
S. flexneri	23	23	19	19	19	18	19	18	22	16	18	10	11	15	22
S. sonnei	8	8	8	9	8	7	8	8	8	8	8	8	9	9	8
Unknown	7	9	8	9	11	8	7	7	8	26	7	7	13	23	11

NOTE:

** Median Calculation excludes California isolates. Age information unavailable for California prior to 2000

FIGURE 1

Median Age of persons from whom laboratory confirmed Shigella isolates were reported to the CDC

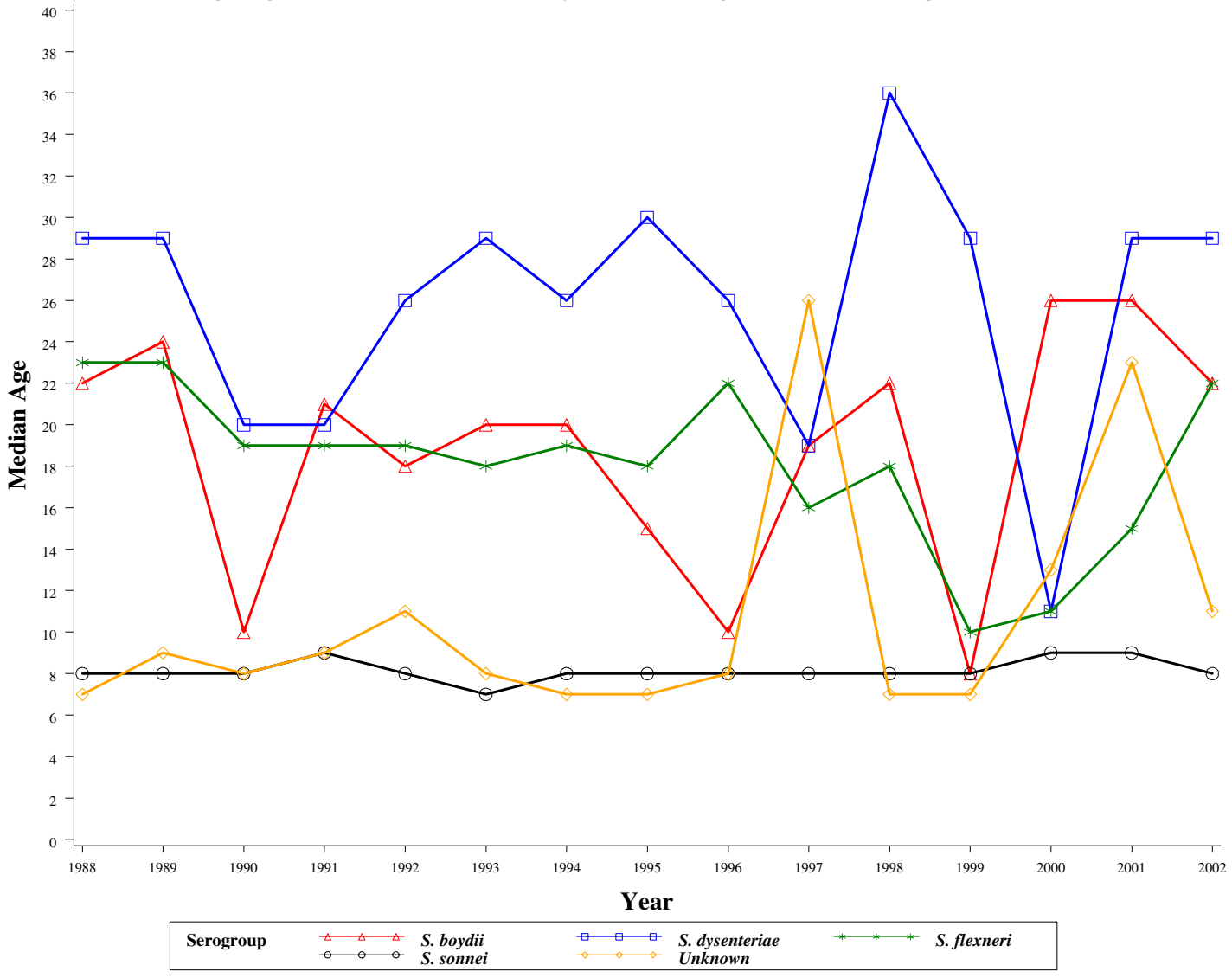

TABLE 5

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup and Year for 1988-2002

	Year															
Subgroup	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
S. boydii	472	466	398	312	224	221	207	229	275	253	208	158	180	126	100	3829
S. dysenteriae	211	216	181	145	126	105	94	90	103	79	87	49	57	48	43	1634
S. flexneri	4338	3682	4031	3712	3250	3061	3101	3019	2704	2573	2207	2025	1820	1668	1523	42714
S. sonnei	15028	10242	11116	10734	10106	14339	12446	14811	10262	8807	9387	7363	10798	8192	10851	164482
Unknown	2287	1366	1580	1602	1217	1785	2935	1181	727	602	596	489	639	564	475	18045
Total	**22336**	**15972**	**17306**	**16505**	**14923**	**19511**	**18783**	**19330**	**14071**	**12314**	**12485**	**10084**	**13494**	**10598**	**12992**	**230704**

FIGURE 2

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup and Year for 1988-2002

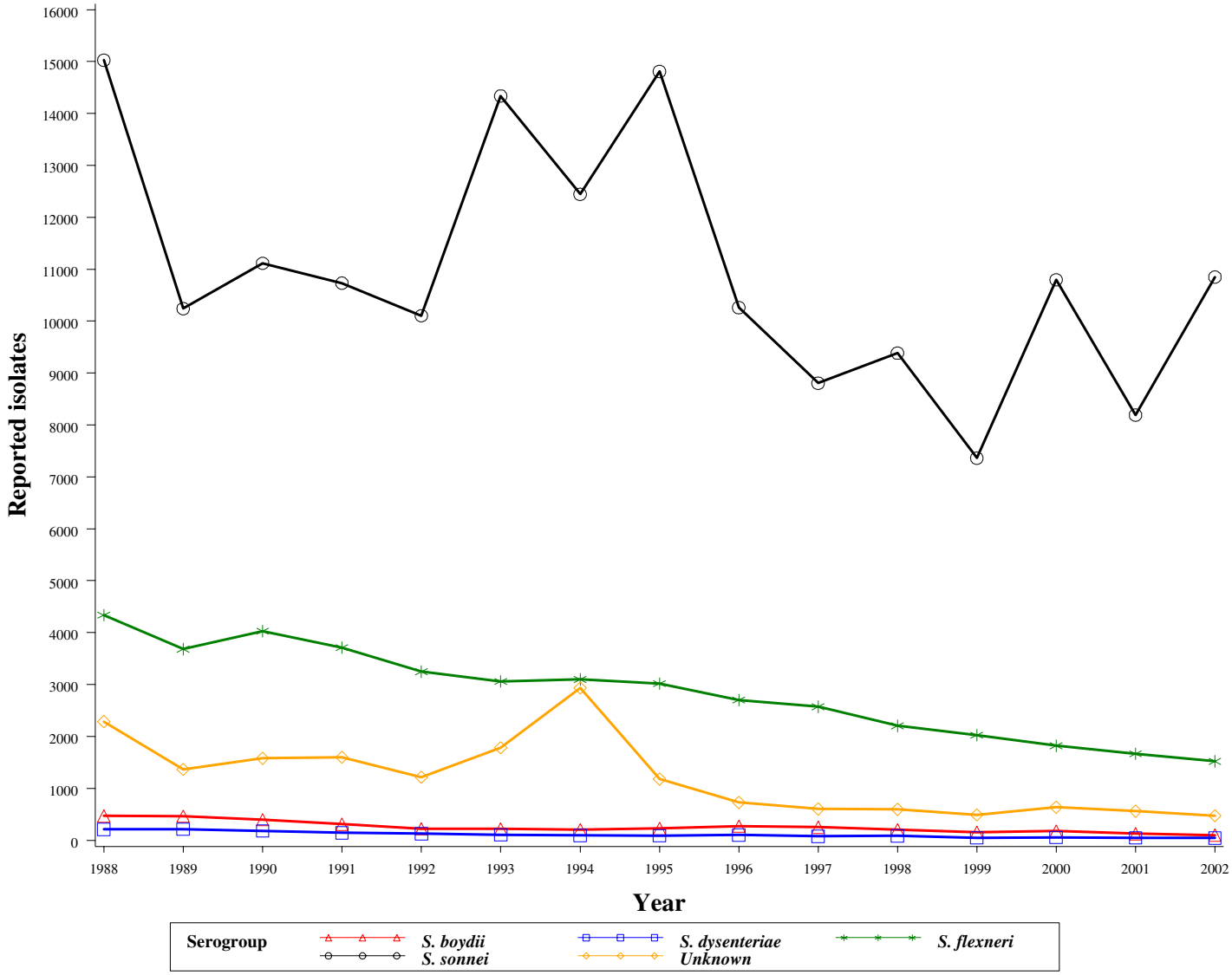

TABLE 6

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, Serotype and Year for 1988-2002

		Year															
Subgroup	**Serotype**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
S. boydii	*boydii* 1	9	16	12	13	7	14	9	15	22	12	12	13	13	11	7	185
	boydii 2	108	55	57	55	19	54	49	60	82	54	43	28	38	26	22	750
	boydii 3	3	2						2		2	2	2	2	3		18
	boydii 4	21	29	11	21	10	12	16	21	14	20	12	16	15	4	10	232
	boydii 5	3	3	5	2	2	2	1	1	1	3		2	7	2		34
	boydii 6	1	1							1		2	5	4	1	2	17
	boydii 7	1	1	1	1			1									5
	boydii 8	1	1	1		1			1		4	1		2	2		14
	boydii 9	1			1				1		1				1		5
	boydii 10	13	14	25	11	5	2	3	7	10	9	5	5		1	2	112
	boydii 11	1	2			2	2			2		1	2	2			14
	boydii 12	2	2		1		1			2	2	2	3	2	6	2	25
	boydii 13				1					1			2				4
	boydii 14	11	15	13	9	6	10	7	12	13	11	5	8	5	3	1	129
	boydii 15			1							1			2	4		8
	boydii 17								1								1
	boydii 18	1	4	4	1			1			2	2	1			1	17
	boydii 19										2	4	1				7
	boydii unspecified	296	321	268	196	172	124	120	108	127	130	117	70	88	62	53	2252
	Sub Total	**472**	**466**	**398**	**312**	**224**	**221**	**207**	**229**	**275**	**253**	**208**	**158**	**180**	**126**	**100**	**3829**
S. dysenteriae	*dysenteriae* 1	28	23	7	3	2	9	7	7	4	6	3	6	9	1	1	116
	dysenteriae 2	33	29	23	20	21	11	8	10	16	17	37	12	5	8	5	255
	dysenteriae 3	6	9	15	10	8	6	10	17	17	10	9	4	3	4	1	129
	dysenteriae 4	3	7	3	3	3	1			3		1		3		5	32
	dysenteriae 5	1								1						1	3
	dysenteriae 6	1			1			1			1						4
	dysenteriae 7		1	1									1				3
	dysenteriae 8	1			1								1			2	5
	dysenteriae 9	2	2	1	3	3		2	1	5	5		1	1	3	3	32
	dysenteriae 10		1											1		2	4
	dysenteriae 11			1						2	2						5
	dysenteriae 12		1				1		1								3
	dysenteriae 13				2												2
	dysenteriae unspecified	136	143	130	102	89	77	66	54	55	38	37	24	35	32	23	1041
	Sub Total	**211**	**216**	**181**	**145**	**126**	**105**	**94**	**90**	**103**	**79**	**87**	**49**	**57**	**48**	**43**	**1634**
S. flexneri	*flexneri* 1 unspecified	314	318	391	391	294	294	310	412	303	238	200	169	145	136	110	4025
	flexneri 1a	64	44	40	16	5	2	8	4	4	6	9	7	5	11	9	234
	flexneri 1b	180	172	167	63	26	12	54	17	7	18	26	25	13	19	23	822
	flexneri 2 unspecified	347	310	314	362	393	394	367	382	401	423	395	361	293	226	183	5151
	flexneri 2a	135	151	168	98	85	88	84	71	31	85	102	134	100	147	101	1580
	flexneri 2b	31	29	25	26	10	17	10	17	7	11	20	13	33	17	14	280
	flexneri 3 unspecified	151	125	118	154	158	165	131	246	255	248	155	93	96	95	70	2260
	flexneri 3a	68	57	36	31	22	11	13	11	26	26	28	65	55	34	51	534
	flexneri 3b	9	13	26	5		2	1	6	16	7	5	4	9	9	13	125
	flexneri 3c	2	6	9	9	5	2		1	2	4	7	5	3	3	3	61
	flexneri 4 unspecified	123	167	106	120	126	91	116	139	124	108	116	75	72	67	74	1624
	flexneri 4a	39	37	57	8	11	19	7	12	17	13	13	34	35	55	53	410

TABLE 6

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, Serotype and Year for 1988-2002

		Year															
Subgroup	**Serotype**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
	flexneri 4b	1	3	10	1	2	2	1		1		4				5	30
	flexneri 5 unspecified	16	17	16	16	14	28	43	62	39	47	56	28	23	17	9	431
	flexneri 6	141	138	99	92	72	67	141	107	119	118	78	79	68	71	59	1449
	flexneri unspecified	2716	2093	2449	2320	2027	1867	1815	1528	1350	1214	985	916	852	738	734	23604
	flexneri variant x	1	1								3	6	2	2	2	4	21
	flexneri variant y		1						4	2	4	2	15	16	21	8	73
	Sub Total	**4338**	**3682**	**4031**	**3712**	**3250**	**3061**	**3101**	**3019**	**2704**	**2573**	**2207**	**2025**	**1820**	**1668**	**1523**	**42714**
S. sonnei	*sonnei*	15028	10242	11116	10734	10106	14339	12446	14811	10262	8807	9387	7363	10798	8192	10851	164482
	Sub Total	**15028**	**10242**	**11116**	**10734**	**10106**	**14339**	**12446**	**14811**	**10262**	**8807**	**9387**	**7363**	**10798**	**8192**	**10851**	**164482**
Unknown	Unknown	2287	1366	1580	1602	1217	1785	2935	1181	727	602	596	489	639	564	475	18045
	Sub Total	**2287**	**1366**	**1580**	**1602**	**1217**	**1785**	**2935**	**1181**	**727**	**602**	**596**	**489**	**639**	**564**	**475**	**18045**
	Total	**22336**	**15972**	**17306**	**16505**	**14923**	**19511**	**18783**	**19330**	**14071**	**12314**	**12485**	**10084**	**13494**	**10598**	**12992**	**230704**

TABLE 7

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, Serotype and Month for 2002

		Month												
Subgroup	**Serotype**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**Total**
S. boydii	*boydii* 1			1	1		1		1	2	1			7
	boydii 2	1	1			1	3	4	2	3	5	2		22
	boydii 4		1	1	1			2	1	2		2		10
	boydii 6									1	1			2
	boydii 10				1								1	2
	boydii 12								2					2
	boydii 14												1	1
	boydii 18								1					1
	boydii unspecified	4	2	4	4	3	3	1	6	5	12	4	5	53
	Sub Total	**5**	**4**	**6**	**7**	**4**	**7**	**7**	**13**	**13**	**19**	**8**	**7**	**100**
S. dysenteriae	*dysenteriae* 1						1							1
	dysenteriae 2			1	1			2		1				5
	dysenteriae 3				1									1
	dysenteriae 4	1	1				1		1			1		5
	dysenteriae 5									1				1
	dysenteriae 8									1		1		2
	dysenteriae 9		3											3
	dysenteriae 10									2				2
	dysenteriae unspecified	4		1	1	1	3	1	4	5	1	1	1	23
	Sub Total	**5**	**4**	**2**	**3**	**1**	**5**	**3**	**5**	**10**	**1**	**3**	**1**	**43**
S. flexneri	*flexneri* 1 unspecified	5	8	4	9	8	11	8	12	11	17	10	7	110
	flexneri 1a			3			1	2		1	1	1		9
	flexneri 1b	3	1	2	2	3	3	3	1	2		3		23
	flexneri 2 unspecified	16	14	16	12	16	11	26	18	13	9	10	22	183
	flexneri 2a	22	5	10	12	7	3	10	11	6	5	3	7	101
	flexneri 2b	1		1	3		1	1	1	1	1	1	3	14
	flexneri 3 unspecified	8	8	7	7	5	4	4	6	8	1	2	10	70
	flexneri 3a	5	2	4	2	4	3	2	7	5	8	3	6	51
	flexneri 3b	1	1	2	3				1		1		4	13
	flexneri 3c							1			1		1	3
	flexneri 4 unspecified	8	5	10	6	3	6	6	11	5	2	4	8	74
	flexneri 4a	3	8	3	6	2	9	7	4	4	4	1	2	53
	flexneri 4b				1	1	1		1	1				5
	flexneri 5 unspecified	2		3	1				1	1	1			9
	flexneri 6	7	4	2	1	6	5	7	9	9	4		5	59
	flexneri unspecified	42	61	63	43	41	58	78	76	60	80	58	74	734
	flexneri variant x				1		1		1	1				4
	flexneri variant y	1			1		1		2			2	1	8
	Sub Total	**124**	**117**	**130**	**110**	**96**	**118**	**155**	**162**	**128**	**135**	**98**	**150**	**1523**
S. sonnei	*sonnei*	594	359	466	453	698	859	1146	1241	1260	1496	1237	1042	10851
	Sub Total	**594**	**359**	**466**	**453**	**698**	**859**	**1146**	**1241**	**1260**	**1496**	**1237**	**1042**	**10851**
Unknown	Unknown	30	22	23	27	34	24	38	68	69	58	39	43	475
	Sub Total	**30**	**22**	**23**	**27**	**34**	**24**	**38**	**68**	**69**	**58**	**39**	**43**	**475**
	Total	**758**	**506**	**627**	**600**	**833**	**1013**	**1349**	**1489**	**1480**	**1709**	**1385**	**1243**	**12992**

TABLE 8

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, Serotype and Month for 1988-2002

		Month												
Subgroup	**Serotype**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**Total**
S. boydii	*boydii* 1	7	6	13	10	15	11	21	20	29	23	13	17	185
	boydii 2	42	33	46	56	49	66	86	111	95	78	53	35	750
	boydii 3	3	2		3	4	4			2				18
	boydii 4	18	10	11	17	10	15	30	36	36	17	21	11	232
	boydii 5	3	1	1	4	4	5	2	2	3	4	5		34
	boydii 6	1	1				2	4	3	2	4			17
	boydii 7		2		1				1		1			5
	boydii 8		2	1	1	1	1		4	1	1		2	14
	boydii 9	1		1							3			5
	boydii 10	4	3	4	7	7	9	15	18	13	12	9	11	112
	boydii 11	1		2	1	1		3	2	2		1	1	14
	boydii 12	1	2	3		2	2	2	7	2	3		1	25
	boydii 13	1									1	1	1	4
	boydii 14	6	2	3	10	13	7	23	21	11	16	11	6	129
	boydii 15				1	4			2	1				8
	boydii 17						1							1
	boydii 18	1	1		2	4			2		2	2	3	17
	boydii 19	2		1		1			1	1	1			7
	boydii unspecified	109	129	100	87	142	186	227	298	303	311	204	156	2252
	Sub Total	**200**	**194**	**186**	**200**	**257**	**309**	**413**	**528**	**501**	**477**	**320**	**244**	**3829**
S. dysenteriae	*dysenteriae* 1	10	4	3	10	6	5	17	19	12	14	1	15	116
	dysenteriae 2	10	35	27	18	14	18	37	32	24	21	13	6	255
	dysenteriae 3	4	4	8	9	14	9	14	26	16	7	11	7	129
	dysenteriae 4	2	5	3	1	2	2	2	7	3	2	2	1	32
	dysenteriae 5									3				3
	dysenteriae 6							2		1		1		4
	dysenteriae 7		1			1			1					3
	dysenteriae 8		1					1	1	1		1		5
	dysenteriae 9		5	2	3	6	2	2	2	3	2	3	2	32
	dysenteriae 10							1		2		1		4
	dysenteriae 11					1	1	1	1		1			5
	dysenteriae 12							1	1		1			3
	dysenteriae 13							1		1				2
	dysenteriae unspecified	74	59	79	71	58	66	93	116	146	110	96	73	1041
	Sub Total	**100**	**114**	**122**	**112**	**102**	**103**	**172**	**206**	**212**	**158**	**129**	**104**	**1634**
S. flexneri	*flexneri* 1 unspecified	284	241	283	283	314	338	406	452	427	448	273	276	4025
	flexneri 1a	23	16	26	14	18	7	23	28	37	13	19	10	234
	flexneri 1b	59	49	62	52	50	88	57	111	114	57	65	58	822
	flexneri 2 unspecified	435	353	352	386	456	407	521	634	445	436	365	361	5151
	flexneri 2a	135	116	121	123	108	145	155	194	138	139	103	103	1580
	flexneri 2b	29	16	29	20	14	24	36	33	21	24	17	17	280
	flexneri 3 unspecified	184	163	155	200	165	149	264	205	237	204	176	158	2260
	flexneri 3a	34	49	39	31	36	42	57	73	51	46	37	39	534
	flexneri 3b	6	10	20	11	8	11	7	15	6	10	10	11	125
	flexneri 3c	5		6	4	6	6	9	3	5	7	6	4	61

TABLE 8

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, Serotype and Month for 1988-2002

		Month												
Subgroup	**Serotype**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUN**	**JUL**	**AUG**	**SEP**	**OCT**	**NOV**	**DEC**	**Total**
	flexneri 4 unspecified	134	100	126	129	124	126	168	178	174	139	115	111	1624
	flexneri 4a	28	33	30	45	32	40	38	25	33	42	31	33	410
	flexneri 4b	5		1	2	6	4	3	1	3		3	2	30
	flexneri 5 unspecified	34	22	28	21	37	50	48	44	48	36	37	26	431
	flexneri 6	78	77	83	111	79	103	187	195	186	139	115	96	1449
	flexneri unspecified	1533	1616	1715	1706	1665	1717	2060	2353	2647	2379	2114	2099	23604
	flexneri variant x		1	2	1	2	1	3	3	3	1	4		21
	flexneri variant y	10	2	10	6	5	8	2	9	5	3	10	3	73
	Sub Total	**3016**	**2864**	**3088**	**3145**	**3125**	**3266**	**4044**	**4556**	**4580**	**4123**	**3500**	**3407**	**42714**
S. sonnei	*sonnei*	9589	8083	9202	8799	11013	13309	15969	20104	19344	18893	15979	14198	164482
	Sub Total	**9589**	**8083**	**9202**	**8799**	**11013**	**13309**	**15969**	**20104**	**19344**	**18893**	**15979**	**14198**	**164482**
Unknown	Unknown	968	972	985	1129	1328	1393	1674	2047	2225	1943	1665	1716	18045
	Sub Total	**968**	**972**	**985**	**1129**	**1328**	**1393**	**1674**	**2047**	**2225**	**1943**	**1665**	**1716**	**18045**
	Total	**13873**	**12227**	**13583**	**13385**	**15825**	**18380**	**22272**	**27441**	**26862**	**25594**	**21593**	**19669**	**230704**

TABLE 9

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, Geographic Region and Year for 1988-2002

		Year															
Subgroup	**Region**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
All *Shigella*	New England	651	546	646	1757	555	520	414	586	373	486	366	851	385	288	325	8749
	Mid Atlantic	1179	1310	1595	1263	1071	1215	1562	1758	2240	1874	1739	750	1726	967	1214	21463
	East North Central	3597	2673	2096	1643	2154	2816	1970	2105	1190	1457	1580	1853	2096	1897	1461	30588
	West North Central	1151	1359	630	403	589	828	1368	1391	699	494	623	806	2064	1332	633	14370
	South Atlantic	2562	2568	1894	1565	1727	2860	4790	2181	1912	1136	1275	534	1171	1331	3624	31130
	East South Central	1685	738	1056	1108	866	1817	1732	1242	576	576	1230	699	587	647	652	15211
	West South Central	1533	1152	1575	1216	892	1894	1062	1504	983	1388	1469	1212	1169	795	1017	18861
	Mountain	1692	1161	1655	2248	1174	1348	1436	2713	1665	1238	764	773	868	775	934	20444
	Pacific	8286	4465	6159	5302	5895	6213	4449	5850	4433	3665	3439	2606	3428	2566	3132	69888
	Total	**22336**	**15972**	**17306**	**16505**	**14923**	**19511**	**18783**	**19330**	**14071**	**12314**	**12485**	**10084**	**13494**	**10598**	**12992**	**230704**
S. boydii	New England	7	16	17	12	4		5	11	6	14	6	8	7	5	6	124
	Mid Atlantic	21	17	10	10	6	11	15	12	5	13	10	12	16	15	11	184
	East North Central	64	42	29	20	16	30	19	31	19	23	25	23	12	12	11	376
	West North Central	6	5	5	7	3		7	6	3	4	4	6	7	7	6	76
	South Atlantic	5	10	8	8	5	10	27	7	10	7	9	9	14	12	7	148
	East South Central	2	2	2		1	4	1		2	1	2		1	2		20
	West South Central	39	36	34	44	11	29	23	27	19	26	15	18	12	5	2	340
	Mountain	52	48	47	30	14	14	18	32	91	41	22	23	38	28	17	515
	Pacific	276	290	246	181	164	123	92	103	120	124	115	59	73	40	40	2046
	Total	**472**	**466**	**398**	**312**	**224**	**221**	**207**	**229**	**275**	**253**	**208**	**158**	**180**	**126**	**100**	**3829**
S. dysenteriae	New England	12	9	8	6	6			3	6	6	10	3	2	3	4	78
	Mid Atlantic	18	9	9	6	8	2	6	6	6	8	7	2	11	7	6	111
	East North Central	21	23	15	11	21	4	6	11	8	2	9	9	4		7	151
	West North Central	8	7	3	1	6	1	2	1	2	2	1	2		3	2	41
	South Atlantic	4	2	5	6	4	4	5	2	8	5	6	2	4	8		65
	East South Central	3	1	2		1	4	3			3	1					18
	West South Central	16	14	14	10	2	6	8	5	7	5	9	1	3	1		101
	Mountain	8	25	7	12	5	12	9	6	18	12	16	7	5	3	5	150
	Pacific	121	126	118	93	73	72	55	56	48	36	28	23	28	23	19	919
	Total	**211**	**216**	**181**	**145**	**126**	**105**	**94**	**90**	**103**	**79**	**87**	**49**	**57**	**48**	**43**	**1634**
S. flexneri	New England	127	150	122	94	107	92	106	115	94	123	102	99	74	88	79	1572
	Mid Atlantic	257	269	254	227	177	211	213	206	179	188	247	176	154	194	106	3058
	East North Central	422	439	465	339	330	287	238	289	267	185	191	223	179	145	153	4152
	West North Central	156	168	125	115	77	67	121	71	105	82	79	95	70	70	77	1478
	South Atlantic	143	101	156	124	137	173	343	196	122	120	136	127	135	164	160	2337
	East South Central	25	15	18	20	16	18	31	28	21	40	18	16	21	26	32	345
	West South Central	359	327	359	268	156	122	128	167	99	164	137	174	121	71	50	2702
	Mountain	503	472	381	491	371	382	353	464	441	484	352	338	312	256	234	5834
	Pacific	2346	1741	2151	2034	1879	1709	1568	1483	1376	1187	945	777	754	654	632	21236
	Total	**4338**	**3682**	**4031**	**3712**	**3250**	**3061**	**3101**	**3019**	**2704**	**2573**	**2207**	**2025**	**1820**	**1668**	**1523**	**42714**
S. sonnei	New England	481	358	448	1573	435	428	302	456	264	341	248	739	299	185	230	6787
	Mid Atlantic	883	1015	1321	1020	880	985	1325	1527	2048	1664	1470	547	1536	744	1090	18055
	East North Central	2685	2061	1443	1176	1671	2440	1707	1773	896	1242	1354	1592	1896	1726	1288	24950
	West North Central	870	1084	446	255	478	698	1166	1281	575	405	538	696	1971	1216	534	12213
	South Atlantic	2155	2268	1535	1210	1451	2280	2695	1966	1772	999	1121	396	1003	1141	3454	25446
	East South Central	1507	567	761	768	699	1369	1341	929	460	532	1209	681	534	608	606	12571
	West South Central	1119	774	1167	891	721	1737	903	1303	857	1193	1292	986	948	705	964	15560

TABLE 9

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, Geographic Region and Year for 1988-2002

		Year															
Subgroup	**Region**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
	Mountain	921	522	1124	1601	722	824	920	2180	1115	695	374	405	506	407	647	12963
	Pacific	4407	1593	2871	2240	3049	3578	2087	3396	2275	1736	1781	1321	2105	1460	2038	35937
	Total	**15028**	**10242**	**11116**	**10734**	**10106**	**14339**	**12446**	**14811**	**10262**	**8807**	**9387**	**7363**	**10798**	**8192**	**10851**	**164482**
Unknown	New England	24	13	51	72	3		1	1	3	2		2	3	7	6	188
	Mid Atlantic			1			6	3	7	2	1	5	13	9	7	1	55
	East North Central	405	108	144	97	116	55		1		5	1	6	5	14	2	959
	West North Central	111	95	51	25	25	62	72	32	14	1	1	7	16	36	14	562
	South Atlantic	255	187	190	217	130	393	1720	10		5	3		15	6	3	3134
	East South Central	148	153	273	320	149	422	356	285	93			2	31	11	14	2257
	West South Central		1	1	3	2			2	1		16	33	85	13	1	158
	Mountain	208	94	96	114	62	116	136	31		6			7	81	31	982
	Pacific	1136	715	773	754	730	731	647	812	614	582	570	426	468	389	403	9750
	Total	**2287**	**1366**	**1580**	**1602**	**1217**	**1785**	**2935**	**1181**	**727**	**602**	**596**	**489**	**639**	**564**	**475**	**18045**

TABLE 10

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, State and Year for 1988-2002

		Year															
Subgroup	**State**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
All *Shigella*	Alabama	444	332	514	450	160	341	479	383	110	193	220	63	79	152	352	4272
	Alaska	9	14	7	30	19	21	14	10	59	3	7	5	3	7	1	209
	Arizona	365	291	498	577	399	369	401	815	695	694	348	413	350	302	439	6956
	Arkansas	94	43	20	91	18	100	61	96	100	60	67	27	63	154		994
	California	7883	4132	5703	4473	5217	5175	3757	5347	3879	3222	3033	2358	2865	2149	2742	61935
	Colorado	371	411	385	216	364	614	529	485	484	199	164	164	221	254	209	5070
	Connecticut	162	233	192	108	131	212	146	148	121	81	66	70	70	60	107	1907
	Delaware	20	60	109	4	7	60	11	125	66	21	38	11	23	16	446	1017
	District of Columbia	142	12	59	45	63	26	19	199	200	8						773
	Florida	487	500	199	378	263	248	721	319	275	245	539	154	107	44	154	4633
	Georgia	657	518	620	532	560	494	2062	176	173	244	252	83	194	465	895	7925
	Hawaii	59	69	60	80	119	89	193	102	86	55	51	36	33	61	61	1154
	Idaho		1	2		13	16	30	74	54	39	15	12	25	15	15	311
	Illinois	1593	883	932	759	910	1142	1030	1215	525	842	1308	1018	941	374	771	14243
	Indiana	925	306	350	334	209	173	181	103	71	30	43	118	157	66	38	3104
	Iowa	320	82	47	30	42	45	323	240	115	72	46	62	350	291	67	2132
	Kansas	52	82	62	56	83	110	57	106	32	80	62	57	147	42	62	1090
	Kentucky	34	16	11	204	28	45	83	86	45	40	45	149	121	336	79	1322
	Louisiana	517	325	214	120	87	303	314	378	344	114	288	137	200	238	546	4125
	Maine	7	9	5	4	9	2	4		6				11	3	1	61
	Maryland	540	151	147	50	276	262	201	226	447	176	69	58	115	104	918	3740
	Massachusetts	325	244	341	1387	240	256	209	288	169	299	260	731	262	190	184	5385
	Michigan	473	772	342	193	494	645	329	454	341	249	5	489	610	232	174	5802
	Minnesota	349	426	122	80	90	236	467	166	164	141	334	254	926	500	226	4481
	Mississippi	205	134	274	261	117	382	461	333	179		7	11	7	32	32	2435
	Missouri	316	213	170	139	273	336	292	609	272	161	136	353	466	215	226	4177
	Montana	258	97	46	136	120	12	2	203	28	5	3					910
	Nebraska		1	5	1	6	1	2	4	4	17	19	68	117			245
	Nevada	4	27	8	2	6	3	2	19	13	13	20	6	66	50	47	286
	New Hampshire	54	27	63	40	6	10	10	79	26	21	22	17	8	4	14	401
	New Jersey	216	216	202	226	220	274	388	675	342	480	652	236	440	227	364	5158
	New Mexico	606	254	462	303	164	272	235	408	177	192	177	109	119	87	185	3750
	New York	475	423	770	361	451	453	697	548	305	790	828	331	840	511	487	8270
	North Carolina	306	932	555	228	307	1089	1130	593	186	173	183	93	271	186	527	6759
	North Dakota	28	193	143	25	13	13	59	126	58	3	3	2	52	41	7	766
	Ohio	128	403	212	97	77	585	276	260	221	307	153	150	332	1197	429	4827
	Oklahoma	75	93	187	130	97	214	85	132	157	134	213	171	45	75	376	2184
	Oregon	50	51	101	350	144	108	87	113	125	173	156	91	113	113	102	1877
	Pennsylvania	488	671	623	676	400	488	477	535	1593	604	259	183	446	229	363	8035
	Rhode Island	34	28	30	214	163	32	43	65	43	83	13	29	34	25	18	854
	South Carolina	83	112	110	38	68	113	180	115	78	30	99	64	94	124	81	1389
	South Dakota	86	362	81	72	82	87	168	140	54	20	23	10	6	243	45	1479
	Tennessee	1002	256	257	193	561	1049	709	440	242	343	958	476	380	127	189	7182
	Texas	847	691	1154	875	690	1277	602	898	382	1080	901	877	861	328	95	11558
	Utah	88	80	254	1014	108	54	235	705	212	95	36	68	84	62	37	3132
	Vermont	69	5	15	4	6	8	2	6	8	2	5	4		6	1	141
	Virginia	305	260	74	257	165	530	466	401	456	226	87	66	350	382	594	4619

TABLE 10

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, State and Year for 1988-2002

		Year															
Subgroup	**State**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
	Washington	285	199	288	369	396	820	398	278	284	212	192	116	414	236	226	4713
	West Virginia	22	23	21	33	18	38		27	31	13	8	5	17	10	9	275
	Wisconsin	478	309	260	260	464	271	154	73	32	29	71	78	56	28	49	2612
	Wyoming						8	2	4	2	1	1	1	3	5	2	29
	Total	**22336**	**15972**	**17306**	**16505**	**14923**	**19511**	**18783**	**19330**	**14071**	**12314**	**12485**	**10084**	**13494**	**10598**	**12992**	**230704**
S. boydii	Alabama	1	1														2
	Alaska			2			1										3
	Arizona	38	30	35	17	6	5	5	22	73	26	9	13	20	11	14	324
	Arkansas	1															1
	California	258	274	232	171	151	105	81	91	102	105	103	54	65	31	38	1861
	Colorado	7	11	5	4	3	3	3	5	6	10	5	3	8	1	1	75
	Connecticut	2	1	1	2	2		3	3	1	1	3		1			20
	Delaware						1	1							1		3
	District of Columbia	1	1		1				2								5
	Florida		1	1	2					1	1	1					7
	Georgia		1	2	2	1	2	19		1	1		4	6	3	2	44
	Hawaii		1			1			1	1		2			2		8
	Idaho											1		1	4	1	7
	Illinois	54	27	15	9	9	26	10	18	15	16	22	16	7	5	3	252
	Indiana	1	2	2	3			2	1			1	1	1		1	15
	Iowa	1	1	1		1		1		1				4	4	2	16
	Kansas			2	2			1	1		1	1		1		2	11
	Kentucky					1				2							3
	Louisiana	2			1		2		1	1	1		2		2		12
	Maine			1											1		2
	Maryland			1	2	2	4	3		2	2	2	1	2	2	1	24
	Massachusetts	5	11	14	10	2			6	4	10	3	7	6	4	4	86
	Michigan	1	5	5	3	2	3	2	7	1	4		3	3	3	5	47
	Minnesota	5	1	2	1	1		3	4	2	3	3	5	1	2	2	35
	Mississippi	1		1													2
	Missouri		2		3	1		2	1						1		10
	Montana			1							1						2
	Nebraska												1	1			2
	Nevada			1	1				1	4	1	2		1	1		12
	New Hampshire		1													1	2
	New Jersey	7	3	3	1		3	5	3	3	4	2	3	7	4		48
	New Mexico	5	5	4	7	4	6	6	3	3	1	4	2	5	6	1	62
	New York	12	11	6	4	6	6	7	7	2	8	8	9	8	7	10	111
	North Carolina	3			1			2	1	1	1	5	1	3		1	19
	Ohio	1	1	3	3		1	4	4	1		2	2		3	1	26
	Oklahoma		1	1			1	3	1			1	2	2		1	13
	Oregon	1	6	2	1	6	7	3	2	3	4	5	3	3	4	2	52
	Pennsylvania	2	3	1	5		2	3	2		1			1	4	1	25
	Rhode Island		2	1				2	1	1	3		1			1	12
	South Carolina					1	1						1	1	1		5
	South Dakota		1		1												2
	Tennessee		1	1			4	1			1	2		1	2		13

TABLE 10

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, State and Year for 1988-2002

		Year															
Subgroup	**State**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
	Texas	36	35	33	43	11	26	20	25	18	25	14	14	10	3	1	314
	Utah	2	2	1	1	1		3	1	5	2	1	5	3	5		32
	Vermont		1						1								2
	Virginia	1	7	3		1	2	2	4	5	2	1	2	2	5	2	39
	Washington	17	9	10	9	6	10	8	9	14	15	5	2	5	3		122
	West Virginia			1												1	2
	Wisconsin	7	7	4	2	5		1	1	2	3		1	1	1	1	36
	Wyoming							1									1
	Total	**472**	**466**	**398**	**312**	**224**	**221**	**207**	**229**	**275**	**253**	**208**	**158**	**180**	**126**	**100**	**3829**
S. dysenteriae	Alabama	2		2		1	1				2						8
	Alaska		1				1										2
	Arizona		7	4	6	2	3	3	4	16	8	11	5	4	1	1	75
	Arkansas		1					1		1							3
	California	114	120	110	86	69	65	51	50	40	27	25	20	23	21	18	839
	Colorado	6	10	1	3	2	7	2	2	1	2	3	2			1	42
	Connecticut	3	4	2		2				1		5				1	18
	District of Columbia			1						2							3
	Florida			1	1	2	1			3		1		1	2		12
	Georgia	3	1		1		2	3		1	1	1	1		3		17
	Hawaii		1	2						1	1						5
	Idaho														1		1
	Illinois	15	14	8	4	18	2	3	10	4		7	5	1		3	94
	Indiana		2	1	2	2	1	1				2				3	14
	Kansas					3				1							4
	Kentucky							1				1					2
	Louisiana	1												1			2
	Maine	1		1													2
	Maryland	1	1		2	2					1			2	1		10
	Massachusetts	8	5	5	6	2			2	5	3	5	2	2	2	3	50
	Michigan	2	5	3	3		1	1	1	1	2		3	2			24
	Minnesota	2	3	2			1	2	1	1	2	1	2		3	1	21
	Missouri	4	3		1											1	9
	Montana		1			1											2
	Nebraska					1											1
	Nevada						1										1
	New Hampshire										1						1
	New Jersey	1	2		2	1	2	1		5	2	5	1	3	3		28
	New Mexico	2	4	1	2		1	2		1	2	2				2	19
	New York	6	3	6	4	5		4	4	1	3	2	1	7		3	49
	North Carolina			2	1					1	2	1	1				8
	North Dakota	1	1			2											4
	Ohio	2	1					1		1			1	1		1	8
	Oklahoma	1	2		2	1				1	1						8
	Oregon		2	1		1	1	2	1	2	4	2	1	1	1		19
	Pennsylvania	11	4	3		2		1	2		3			1	4	3	34
	Rhode Island					2					2		1		1		6
	South Dakota	1		1													2

TABLE 10

Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, State and Year for 1988-2002

		Year															
Subgroup	**State**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
	Tennessee	1	1				3	2			1						8
	Texas	14	11	14	8	1	6	7	5	5	4	9	1	2	1		88
	Utah		3	1	1			1						1	1	1	9
	Vermont								1								1
	Virginia			1	1		1	2	2	1	1	3		1	2		15
	Washington	7	2	5	7	3	5	2	5	5	4	1	2	4	1	1	54
	Wisconsin	2	1	3	2	1				2							11
	Wyoming							1									1
	Total	**211**	**216**	**181**	**145**	**126**	**105**	**94**	**90**	**103**	**79**	**87**	**49**	**57**	**48**	**43**	**1634**
S. flexneri	Alabama	3	3	6	3		2	11	5	7	7	5	5	8	8	7	80
	Alaska	3	8	2	4	2	6	4		6	1		4		3		43
	Arizona	208	181	150	259	225	212	197	263	279	287	202	192	158	140	112	3065
	Arkansas	6	3	1	1	2	1	2		2		4	2	4	2		30
	California	2175	1577	1957	1831	1689	1478	1323	1269	1130	1000	767	631	610	477	511	18425
	Colorado	82	96	65	71	52	44	61	87	83	58	57	64	55	40	57	972
	Connecticut	25	21	17	13	26	13	25	18	15	23	15	20	15	21	17	284
	Delaware			1	1	1	1	2	3		5	1	5	11	4	3	38
	District of Columbia	30	4	19	24	18	13	15	28	10	4						165
	Florida	7	4	9	4	8	9	5	12	10	11	8	10	7	9	8	121
	Georgia	13	29	31	27	32	44	198	41	30	26	43	47	53	51	57	722
	Hawaii	41	42	36	57	72	63	68	57	67	31	25	25	17	39	32	672
	Idaho			1		3	7	13	2	4	9	9	6	8	3	3	68
	Illinois	285	283	340	222	208	204	157	192	167	124	163	159	110	65	81	2760
	Indiana	25	29	21	24	8	12	17	17	14	8	11	13	15	11	11	236
	Iowa	24	18	8	8	7	5	11	9	13	15	6	9	10	6	11	160
	Kansas	9	9	12	13	7	6	9	5	9	4	12	11	7	7	5	125
	Kentucky	1	2	2	4		2	6	2		13	2		2	2	2	40
	Louisiana	22	21	19	16	8	13	10	12	14	11	15	5	5	3	27	201
	Maine		4		1	4		1		6				1			17
	Maryland	23	20	31	11	31	45	61	32	32	18	29	21	19	34	26	433
	Massachusetts	89	103	95	71	60	69	66	73	50	90	81	60	43	53	49	1052
	Michigan	47	53	50	45	82	51	39	59	54	34		37	30	42	43	666
	Minnesota	23	32	26	20	20	16	75	28	53	40	39	37	22	30	34	495
	Mississippi	4	4	2	1	2		1				2		1	4	6	27
	Missouri	21	21	26	18	8	7	10	8	11	11	11	14	18	17	23	224
	Montana	7	2	7	9	1	1	1	6	1		2					37
	Nebraska			5						1		1	15	10			32
	Nevada	4	6	4	1	2			5		6	8	6	14	17	9	82
	New Hampshire	4	9	2	2	3	3	2	3	3	2	2	7	3	1	5	51
	New Jersey	58	51	44	43	42	42	49	69	49	46	85	59	44	38	16	735
	New Mexico	165	145	124	110	75	89	52	78	65	74	53	48	38	29	35	1180
	New York	144	142	155	122	93	125	128	107	81	101	126	93	86	139	58	1700
	North Carolina	27	18	39	26	23	30	22	32	20	34	23	24	22	35	32	407
	North Dakota	12	16	5	1	3	5			1	1	1	1	1	4		51
	Ohio	15	24	21	10	9	6	5	9	16	7	13	10	21	20	13	199
	Oklahoma	11	9	10	11	9	4	5	14	8	4	3	6	4	6	8	112
	Oregon	18	27	39	31	19	47	32	37	61	54	60	51	38	56	25	595

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		Year															
Subgroup	**State**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
	Pennsylvania	55	76	55	62	42	44	36	30	49	41	36	24	24	17	32	623
	Rhode Island	8	12	3	7	13	5	12	19	18	8	4	10	12	9	7	147
	South Carolina	9	5	10	7	9	1	7	5	3	7	5	1	3	7	7	86
	South Dakota	67	72	43	55	32	28	16	21	17	11	9	8	2	6	4	391
	Tennessee	17	6	8	12	14	14	13	21	14	20	9	11	10	12	17	198
	Texas	320	294	329	240	137	104	111	141	75	149	115	161	108	60	15	2359
	Utah	37	42	30	41	13	24	29	23	8	50	21	21	38	27	16	420
	Vermont	1	1	5		1	2		2	2			2		4	1	21
	Virginia	30	19	15	24	15	28	33	43	15	15	27	19	19	22	26	350
	Washington	109	87	117	111	97	115	141	120	112	101	93	66	89	79	64	1501
	West Virginia	4	2	1			2			2				1	2	1	15
	Wisconsin	50	50	33	38	23	14	20	12	16	12	4	4	3	7	5	291
	Wyoming						5			1			1	1		2	10
	Total	**4338**	**3682**	**4031**	**3712**	**3250**	**3061**	**3101**	**3019**	**2704**	**2573**	**2207**	**2025**	**1820**	**1668**	**1523**	**42714**
S. sonnei	Alabama	391	262	365	361	111	200	356	281	103	184	215	58	71	144	345	3447
	Alaska	6	5	2	26	17	13	10	10	53	2	7	1	3	4	1	160
	Arizona	112	73	309	294	166	149	196	523	327	373	126	203	168	140	308	3467
	Arkansas	87	38	19	89	16	99	58	96	97	60	63	25	59	152		958
	California	4209	1448	2632	1632	2580	2806	1657	3126	1993	1508	1568	1227	1700	1237	1779	31102
	Colorado	228	236	255	112	245	444	329	365	394	129	99	95	151	144	129	3355
	Connecticut	132	207	172	93	101	199	117	127	104	57	43	48	53	38	87	1578
	Delaware	20	60	108	3	6	58	8	122	66	16	37	6	12	11	443	976
	District of Columbia	109	7	39	20	45	12	4	166	188	4						594
	Florida	480	495	188	371	252	237	694	305	261	233	529	144	99	32	146	4466
	Georgia	392	313	399	293	404	68	149	131	141	213	205	31	123	407	835	4104
	Hawaii	18	24	22	23	46	26	125	44	17	23	24	11	16	20	29	468
	Idaho			1		10	9	17	72	50	30	5	6	16	6	10	232
	Illinois	1238	559	567	524	674	910	860	995	339	702	1116	835	820	303	683	11125
	Indiana	545	202	224	238	168	160	161	85	57	22	29	104	141	52	23	2211
	Iowa	200	51	29	18	27	34	263	231	101	57	40	53	336	279	54	1773
	Kansas	43	73	48	41	73	104	47	100	22	75	49	46	139	35	55	950
	Kentucky	33	14	9	200	27	43	76	84	43	27	42	149	119	334	77	1277
	Louisiana	492	304	195	103	78	288	304	365	329	102	273	130	194	233	519	3909
	Maine	6	5	3	3	5	2	3						8		1	36
	Maryland	516	130	115	35	239	213	134	194	413	154	38	36	91	66	891	3265
	Massachusetts	223	125	227	1300	176	187	143	206	109	194	171	662	211	127	124	4185
	Michigan	422	706	284	142	408	590	287	387	285	209	5	445	575	185	125	5055
	Minnesota	305	314	56	42	54	166	385	133	105	95	290	204	887	455	181	3672
	Mississippi	99	43	139	26	14	98	217	146	86		5	11	6	28	26	944
	Missouri	291	187	144	117	264	329	280	599	260	150	125	339	448	197	199	3929
	Montana	108	66	14	122	118	11	1	196	27	4	1					668
	Nebraska		1		1	5	1	2	4	3	17	18	51	106			209
	Nevada		21	3		4	2	2	13	9	4	10		51	32	36	187
	New Hampshire	38	5	29	29	3	7	8	76	21	18	20	10	5	3	8	280
	New Jersey	150	160	155	180	177	222	331	599	285	428	558	171	385	181	348	4330
	New Mexico	434	100	333	184	85	176	175	327	108	111	118	59	76	52	144	2482
	New York	313	267	602	231	347	321	557	427	219	677	689	219	735	359	415	6378

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		Year															
Subgroup	**State**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
	North Carolina	276	911	514	200	284	1059	1105	560	164	136	154	67	246	151	494	6321
	North Dakota	13	176	135	20	5	5	37	95	47	2	2	1	51	13	4	606
	Ohio	110	377	187	84	68	575	266	246	203	295	137	135	308	1166	414	4571
	Oklahoma	63	81	176	116	87	209	77	116	147	129	208	163	39	69	366	2046
	Oregon	22	15	59	317	116	53	50	73	59	111	89	36	70	48	70	1188
	Pennsylvania	420	588	564	609	356	442	437	501	1544	559	223	157	416	204	327	7347
	Rhode Island	24	13	14	144	147	27	29	45	24	70	9	17	22	15	10	610
	South Carolina	74	107	100	31	58	111	172	110	75	23	94	62	90	115	74	1296
	South Dakota	18	282	34	16	50	59	152	119	37	9	14	2	4	237	41	1074
	Tennessee	984	248	248	181	547	1028	692	418	228	321	947	463	338	102	158	6903
	Texas	477	351	777	583	540	1141	464	726	284	902	748	668	656	251	79	8647
	Utah	39	26	209	889	94	30	200	680	199	43	14	42	42	29	20	2556
	Vermont	58	3	3	4	3	6	2	2	6	2	5	2		2		98
	Virginia	274	234	55	232	148	498	429	351	435	207	56	45	326	351	564	4205
	Washington	152	101	156	242	290	680	245	143	153	92	93	46	316	151	159	3019
	West Virginia	14	11	17	25	15	24		27	29	13	8	5	16	8	7	219
	Wisconsin	370	217	181	188	353	205	133	60	12	14	67	73	52	20	43	1988
	Wyoming						3		4	1	1	1		2	4		16
	Total	**15028**	**10242**	**11116**	**10734**	**10106**	**14339**	**12446**	**14811**	**10262**	**8807**	**9387**	**7363**	**10798**	**8192**	**10851**	**164482**
Unknown	Alabama	47	66	141	86	48	138	112	97								735
	Alaska			1													1
	Arizona	7			1				3						10	4	25
	Arkansas		1		1												2
	California	1127	713	772	753	728	721	645	811	614	582	570	426	467	383	396	9708
	Colorado	48	58	59	26	62	116	134	26					7	69	21	626
	Connecticut							1					2	1	1	2	7
	District of Columbia	2					1		3								6
	Florida					1	1	22	2						1		27
	Georgia	249	174	188	209	123	378	1693	4		3	3		12	1	1	3038
	Hawaii		1														1
	Idaho		1												1	1	3
	Illinois	1		2		1							3	3	1	1	12
	Indiana	354	71	102	67	31									3		628
	Iowa	95	12	9	4	7	6	48							2		183
	Louisiana					1											1
	Maine													2	2		4
	Maryland					2		3			1			1	1		8
	Massachusetts								1	1	2				4	4	12
	Michigan	1	3			2							1		2	1	10
	Minnesota	14	76	36	17	15	53	2		3	1	1	6	16	10	8	258
	Mississippi	101	87	132	234	101	284	243	187	93							1462
	Missouri								1	1						3	5
	Montana	143	28	24	5				1								201
	Nebraska												1				1
	Nevada										2					2	4
	New Hampshire	12	12	32	9					2							67
	New Jersey						5	2	4			2	2	1	1		17

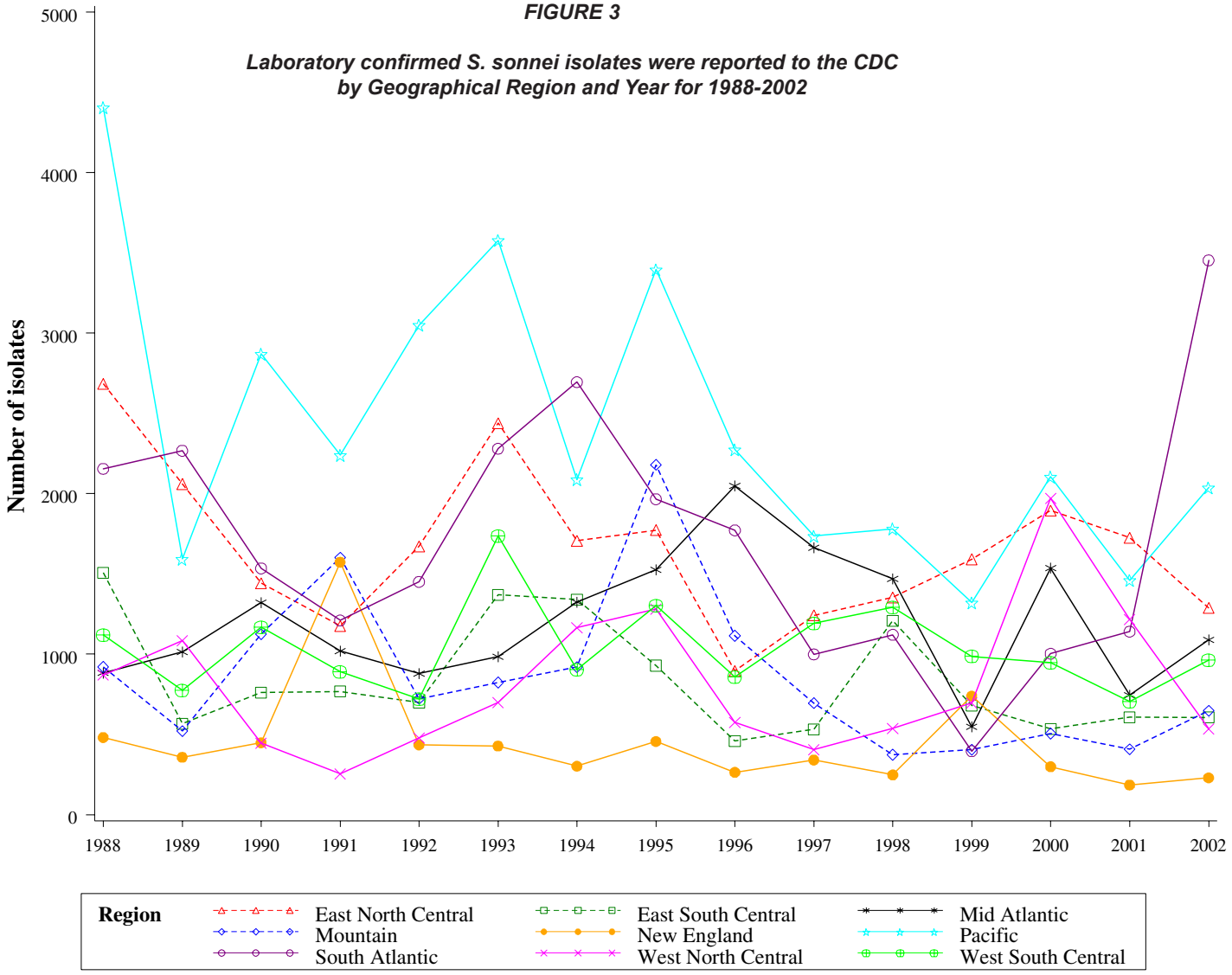
TABLE 10

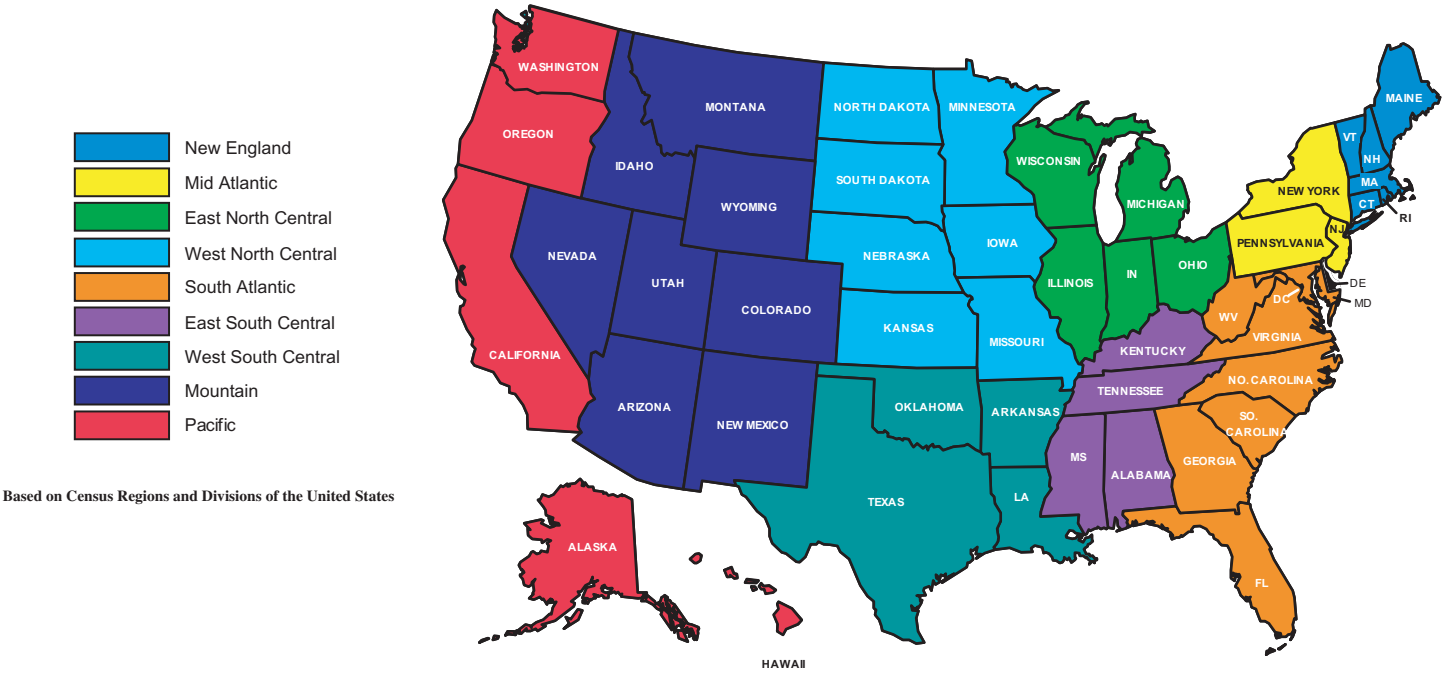
Laboratory confirmed Shigella isolates reported to the CDC by Subgroup, State and Year for 1988-2002

		Year															
Subgroup	**State**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total**
	New Mexico										4					3	7
	New York			1			1	1	3	2	1	3	9	4	6	1	32
	North Carolina		3					1									4
	North Dakota	2		3	4	3	3	22	31	10					24	3	105
	Ohio			1			3		1		5	1	2	2	8		23
	Oklahoma				1				1	1		1				1	5
	Oregon	9	1		1	2								1	4	5	23
	Pennsylvania												2	4			6
	Rhode Island	2	1	12	63	1											79
	South Carolina							1							1		2
	South Dakota		7	3													10
	Tennessee							1	1				2	31	11	14	60
	Texas			1	1	1			1			15	33	85	13		150
	Utah	10	7	13	82			2	1								115
	Vermont	10		7		2											19
	Virginia					1	1		1		1			2	2	2	10
	Washington						10	2	1						2	2	17
	West Virginia	4	10	2	8	3	12										39
	Wisconsin	49	34	39	30	82	52										286
	Wyoming														1		1
	Total	**2287**	**1366**	**1580**	**1602**	**1217**	**1785**	**2935**	**1181**	**727**	**602**	**596**	**489**	**639**	**564**	**475**	**18045**

FIGURE 3

Laboratory confirmed S. sonnei isolates were reported to the CDC by Geographical Region and Year for 1988-2002





Based on Census Regions and Divisions of the United States