

National Enteric Disease Surveillance: *Salmonella* Annual Report, 2014

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

An overview of surveillance methods and systems for *Salmonella* infections is available at http://www.cdc.gov/nationalsurveillance/PDFs/NationalSalmSurveillOverview_508.pdf (1).

Data in this report are current as of February 10, 2017.

Summary

- In 2014, 53 state and regional public health laboratories reported 44,450 cases of culture-confirmed *Salmonella* infections to LEDS, 10% more than in 2013.
- The incidence of culture-confirmed salmonellosis in 2014 (13.9 cases per 100,000 population) increased since 2013 (12.8 cases per 100,000 population).¹
- Many of the major serotypes increased in incidence compared with 2013 (Figure 1).
- As seen in previous years, infants (<1 year old) had the highest incidence of infection (110.2 cases per 100,000 population for boys and 94.2 for girls).
- More than half of states in the South region had incidence above the national average (including AL, AR, GA, LA, MD, MS, NC, OK, and SC).²
- As in previous years, the largest percentage of cases were reported during the summer months.

¹ For reporting year 2014, the LEDS *Salmonella* Annual Report only includes *Salmonella* infections confirmed by culture.

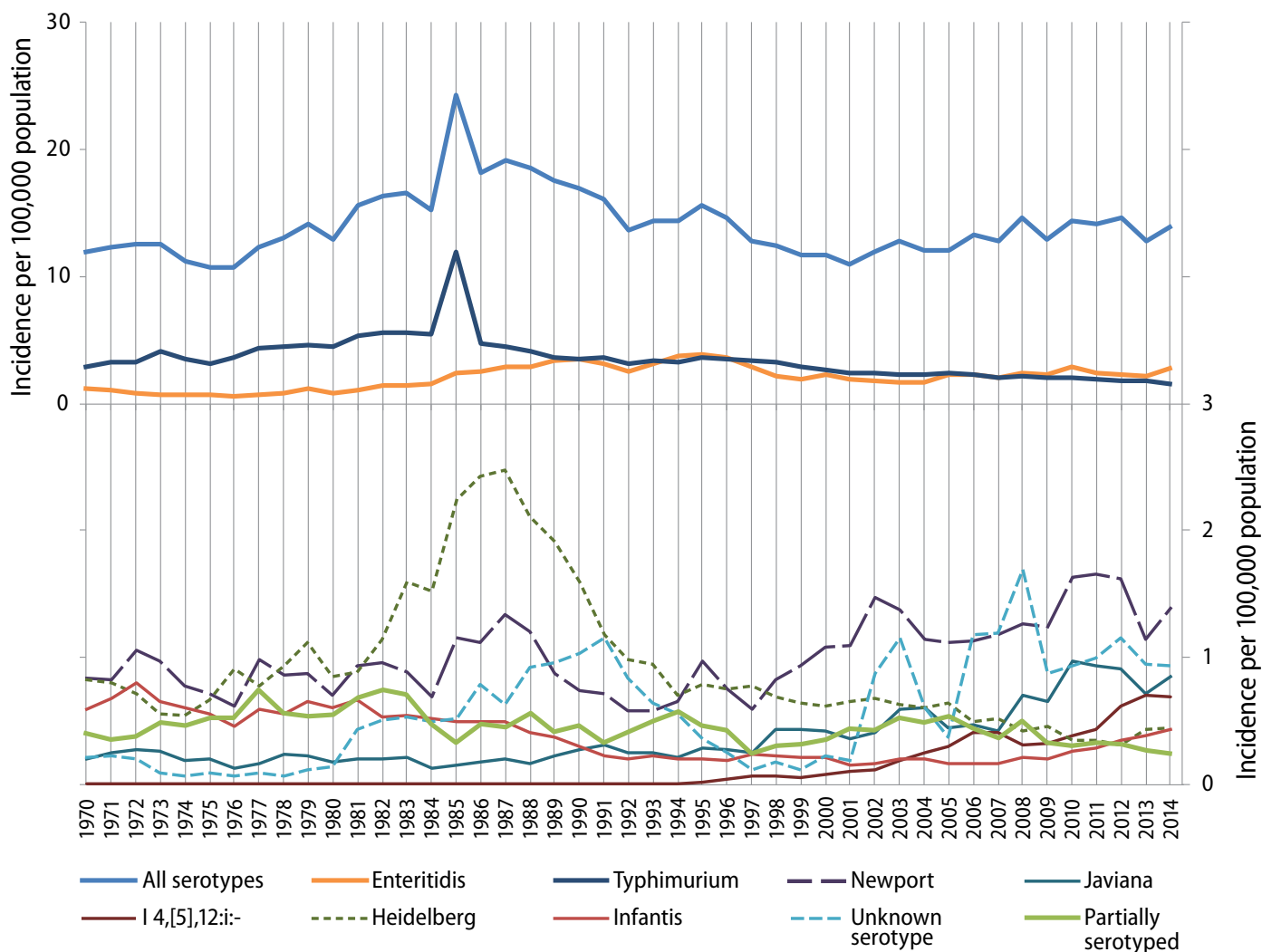
² Geographic regions in this report are consistent with those defined by the United States Census Bureau (https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us_regdiv.pdf).

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Figure 1. Incidence rate of culture-confirmed human *Salmonella* infection reported to LEDS (all serotypes and individual serotypes with ≥ 1000 infections reported in 2014), by year, United States, 1970–2014



- Whereas the incidence rate of infection with all *Salmonella* has increased by 27% since 2001, incidence rates for infection with serotypes Enteritidis (↑ 44%), I 4,[5],12:i:- (↑ 590%), Infantis (↑ 187%), and Javiana (↑ 136%) have increased the most during the same period.
- “Unknown serotype” indicates cases that were reported with no associated serotype information. The number of cases reported in this way has been increasing since 2000 and is likely due to serotyping not being performed on these isolates.
- The peak in incidence of serotype Typhimurium infections in 1985 was due to an outbreak associated with pasteurized milk (2).

Note: Full data tables for graphs at <https://www.cdc.gov/nationalsurveillance/data/salm2014/Fig1.xlsx>

Table 1a. Culture-confirmed human *Salmonella* infections reported to LEDS, with the 20 most frequently reported serotypes listed individually, United States, 2014

Rank	Serotype	Number reported	Percent	Incidence
1	Enteritidis	8,895	20.0	2.79
2	Typhimurium	5,041	11.3	1.58
3	Newport	4,437	10.0	1.39
4	Javiana	2,704	6.1	0.85
5	I 4,[5],12:i:-	2,189	4.9	0.69
6	Heidelberg	1,430	3.2	0.45
7	Infantis	1,357	3.1	0.43
8	Saintpaul	980	2.2	0.31
9	Muenchen	873	2.0	0.27
10	Montevideo	841	1.9	0.26
11	Oranienburg	728	1.6	0.23
12	Thompson	626	1.4	0.20
13	Braenderup	610	1.4	0.19
14	Mississippi	532	1.2	0.17
15	Typhi	527	1.2	0.17
16	Bareilly	381	0.9	0.12
17	Paratyphi B var. L(+) tartrate+	335	0.8	0.11
18	Poona	322	0.7	0.10
19	Berta	318	0.7	0.10
20	Agona	307	0.7	0.10
	Subtotal	33,433	75.2	
	Other serotyped*	7,101	17.5	2.23
	Unknown serotype	2,954	6.6	0.93
	Partially serotyped	771	1.7	0.24
	Rough, mucoid, and/or nonmotile	185	0.4	0.06
	Subtotal	11,011	24.8	
	Total	44,444	100.0	13.94

* Listed individually in Appendix 3

Table 1b. Incidence rate of culture-confirmed human *Salmonella* infections reported to LEDS, by age group and sex, United States, 2014 (n = 39,074 with age and sex information reported)

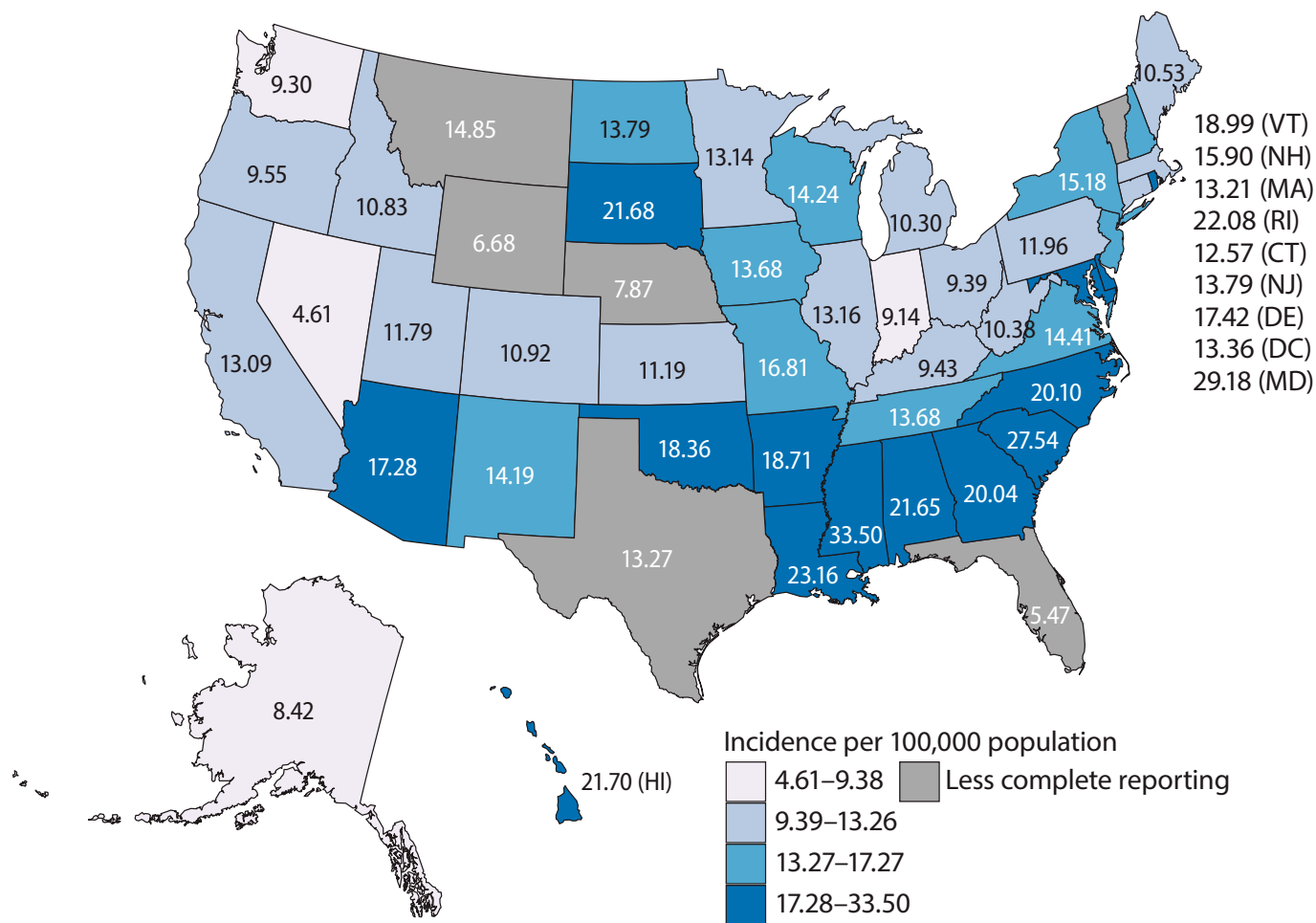
Age group, years	Incidence	
	Female	Male
<1	94.22	110.22
1–4	36.08	36.58
5–9	15.49	15.75
10–19	9.20	10.21
20–29	11.37	8.82
30–39	9.61	8.74
40–49	10.09	7.90
50–59	11.88	9.33
60–69	12.81	11.48
70–79	16.88	13.93
≥80	15.73	14.10
Overall	13.92	12.86

Table 2. Percentage change among the 20 *Salmonella* serotypes most frequently reported to LEDS, comparing 2004, 2009, and 2014

Serotype	Rank			Number Reported			Percentage Change		
	2004	2009	2014	2004	2009	2014	2004 vs 2009	2009 vs 2014	2004 vs 2014
Enteritidis	2	1	1	4993	7122	8895	+ 42.6	+ 24.9	+ 78.1
Typhimurium	1	2	2	6810	6087	5041	- 10.6	- 17.2	- 26.0
Newport	3	3	3	3345	3815	4437	+ 14.1	+ 16.3	+ 32.6
Javiana	4	4	4	1766	1992	2704	+ 12.8	+ 35.7	+ 53.1
I 4,[5],12:i:-	8	7	5	744	991	2189	+ 33.2	+ 120.9	+ 194.2
Heidelberg	5	5	6	1748	1409	1430	- 19.4	+ 1.5	- 18.2
Infantis	11	12	7	582	626	1357	+ 7.6	+ 116.8	+ 133.2
Saintpaul	9	9	8	688	850	980	+ 23.5	+ 15.3	+ 42.4
Muenchen	7	10	9	747	818	873	+ 9.5	+ 6.7	+ 16.9
Montevideo	6	6	10	870	1259	841	+ 44.7	- 33.2	- 3.3
Oranienburg	14	8	11	490	893	728	+ 82.2	- 18.5	+ 48.6
Thompson	13	13	12	493	473	626	- 4.1	+ 32.3	+ 27.0
Braenderup	10	11	13	678	715	610	+ 5.5	- 14.7	- 10.0
Mississippi	12	14	14	557	443	532	- 20.5	+ 20.1	- 4.5
Typhi	20	16	15	305	427	527	+ 40.0	+ 23.4	+ 72.8
Bareilly	25	20	16	231	282	381	+ 22.1	+ 35.1	+ 64.9
Paratyphi B var. L(+) tartrate+	18	15	17	348	431	335	+ 23.9	- 22.3	- 3.7
Poona	24	24	18	232	235	322	+ 1.3	+ 37.0	+ 38.8
Berta	15	29	19	408	182	318	- 55.4	+ 74.7	- 22.1
Agona	16	17	20	403	380	307	- 5.7	- 19.2	- 23.8

- In 2014, serotype I 4,[5],12:i:- had the largest increase (↑ 194%) since 2004, but this increase was due at least in part to increased recognition and changes in reporting practice (1).

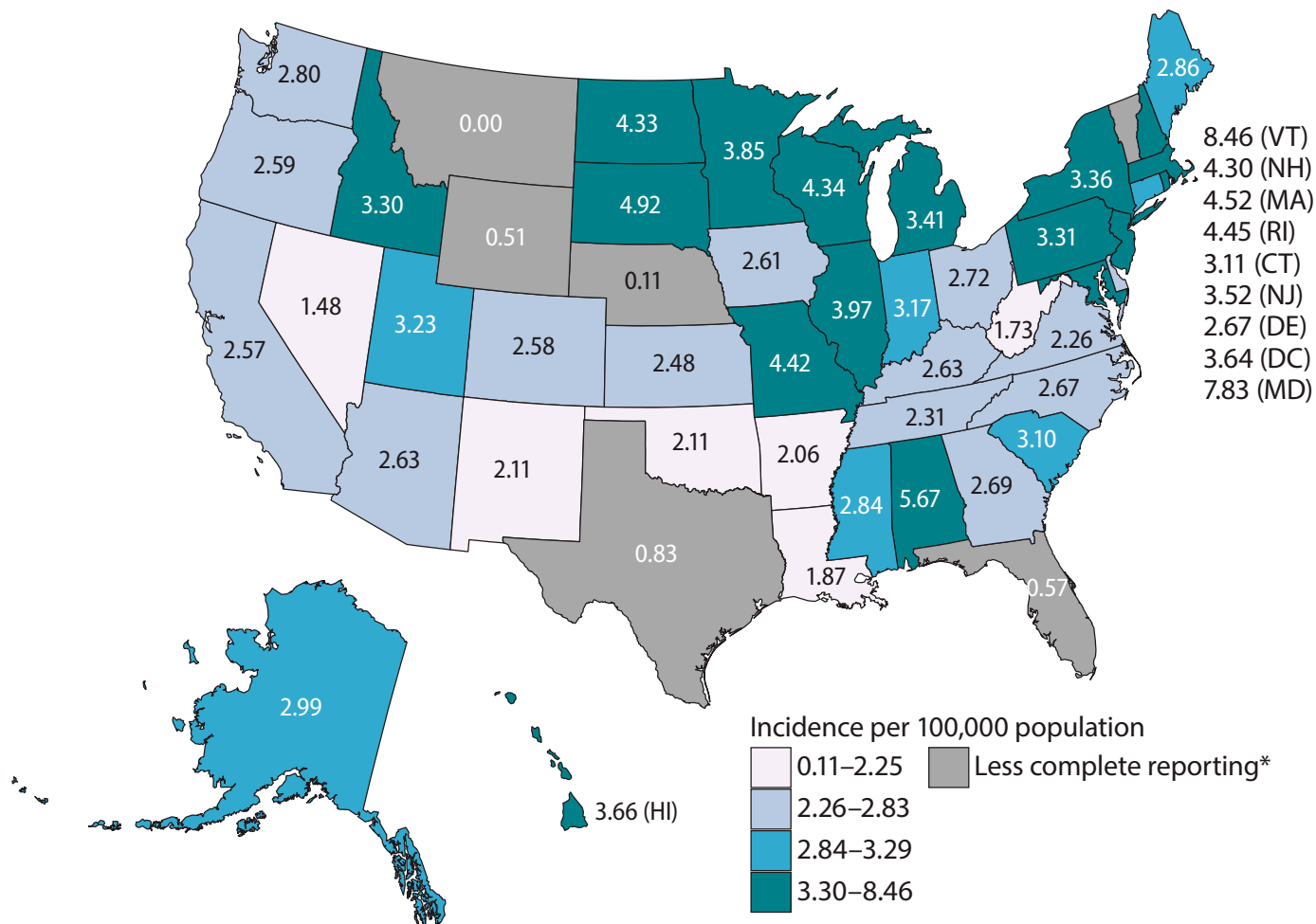
Figure 2a. Incidence rate of culture-confirmed human *Salmonella* infection reported to LEDS (all serotypes), by reporting jurisdiction, United States, 2014 (n = 44,450)



*States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the [National Notifiable Diseases Surveillance System \(NNDSS\)](https://www.cdc.gov/nndss/) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at: https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2a_all_irdf.csv

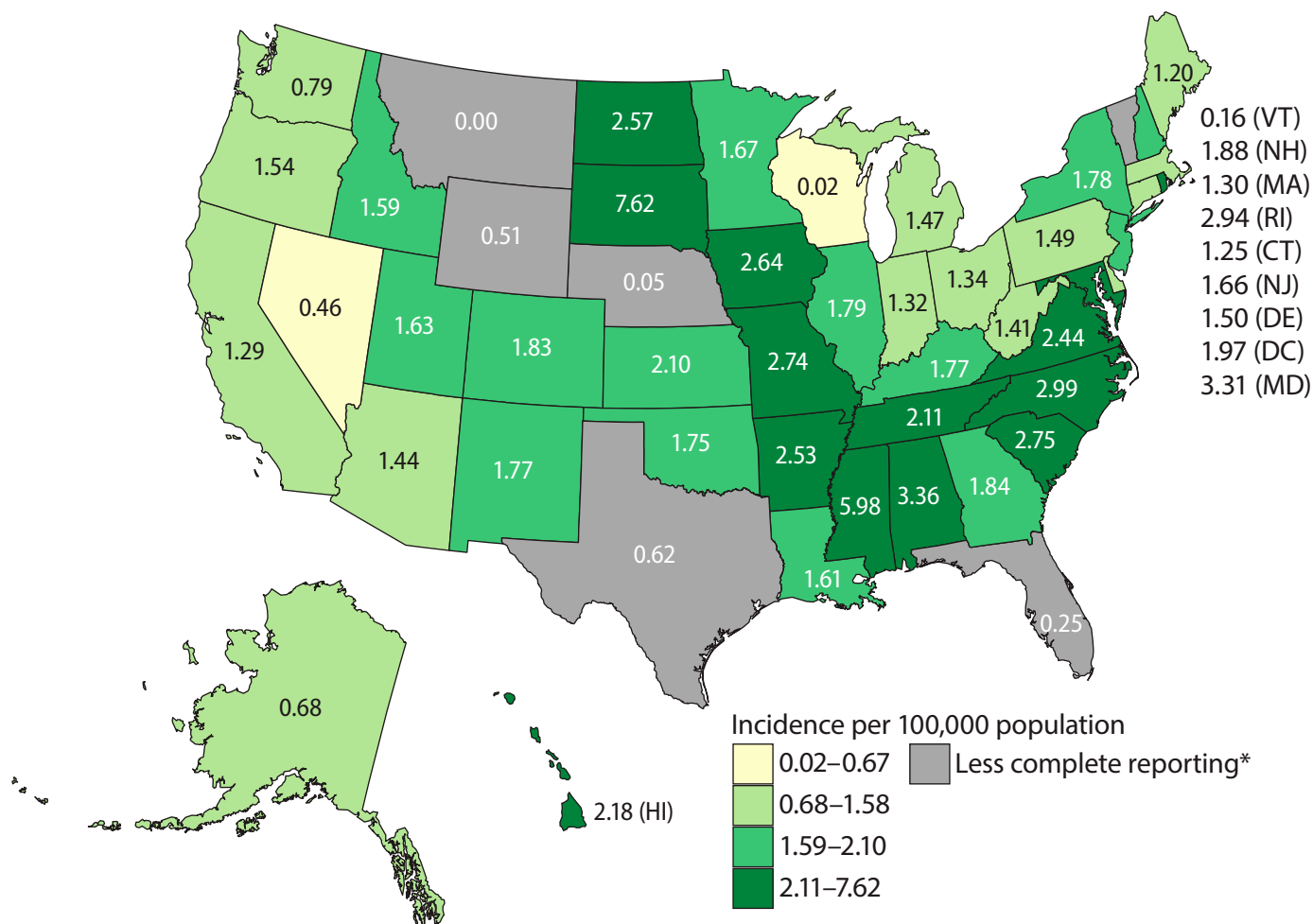
Figure 2b. Incidence rate of culture-confirmed human *Salmonella* serotype Enteritidis infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 8,895)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2b_enteritidis_irdf.csv

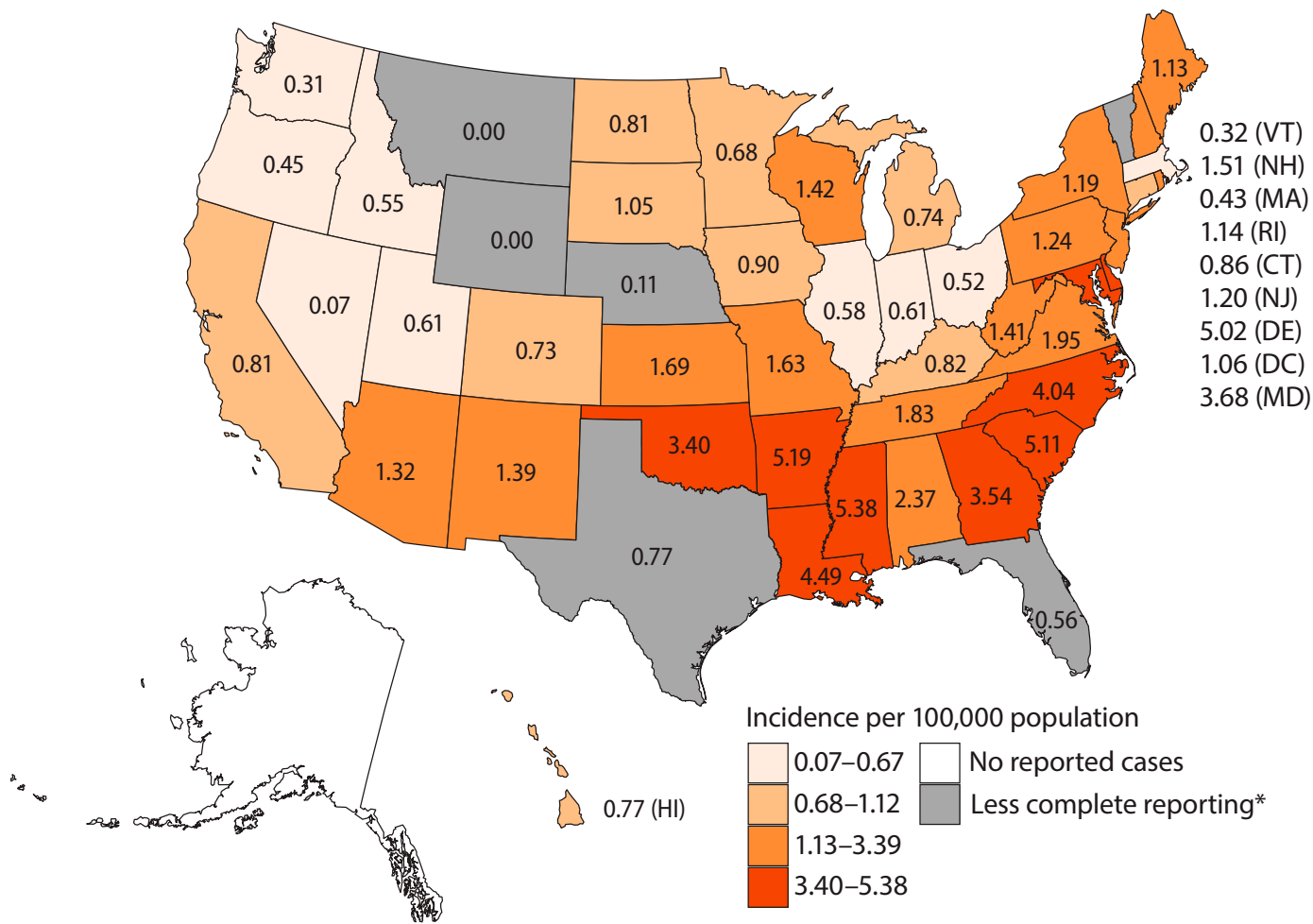
Figure 2c. Incidence rate of culture-confirmed human *Salmonella* serotype Typhimurium infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 5,041)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the [National Notifiable Diseases Surveillance System \(NNDSS\)](https://www.cdc.gov/nndss/) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2c_typhimurium_irdf.csv

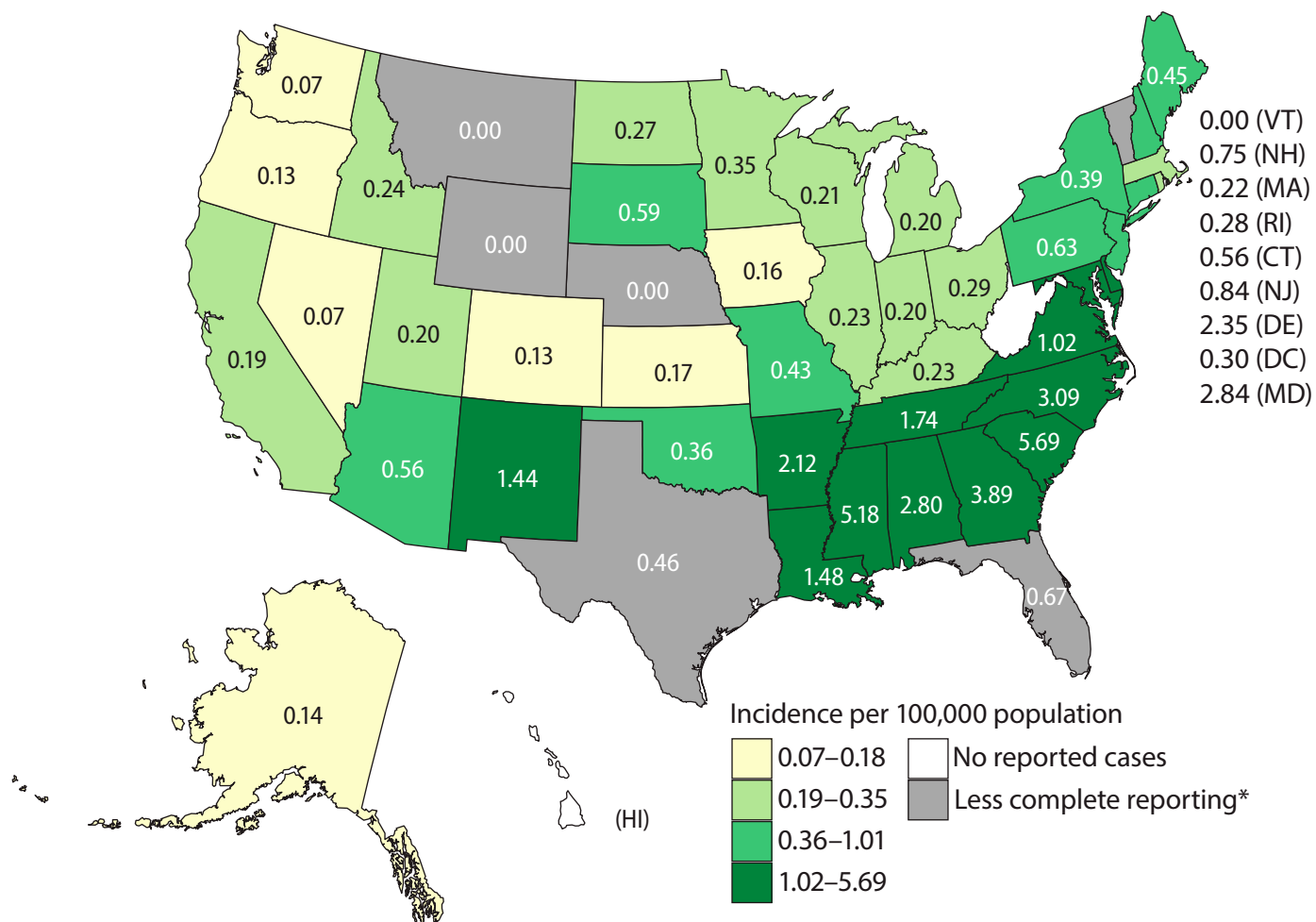
Figure 2d. Incidence rate of culture-confirmed human *Salmonella* serotype Newport infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 4,437)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2d_newport_irdf.csv

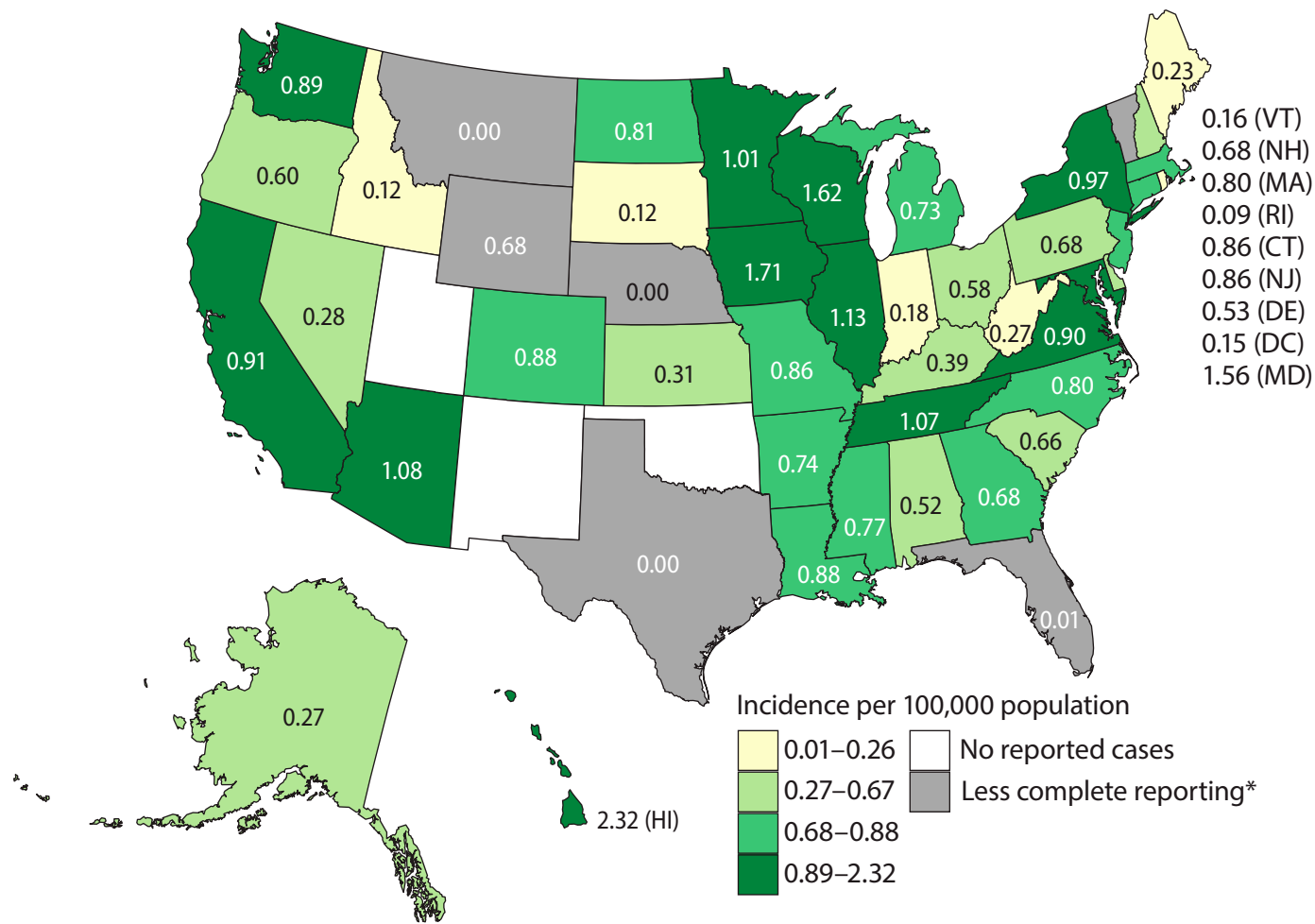
Figure 2e. Incidence rate of culture-confirmed human *Salmonella* serotype Javiana infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 2,704)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2e_javiana_irdf.csv

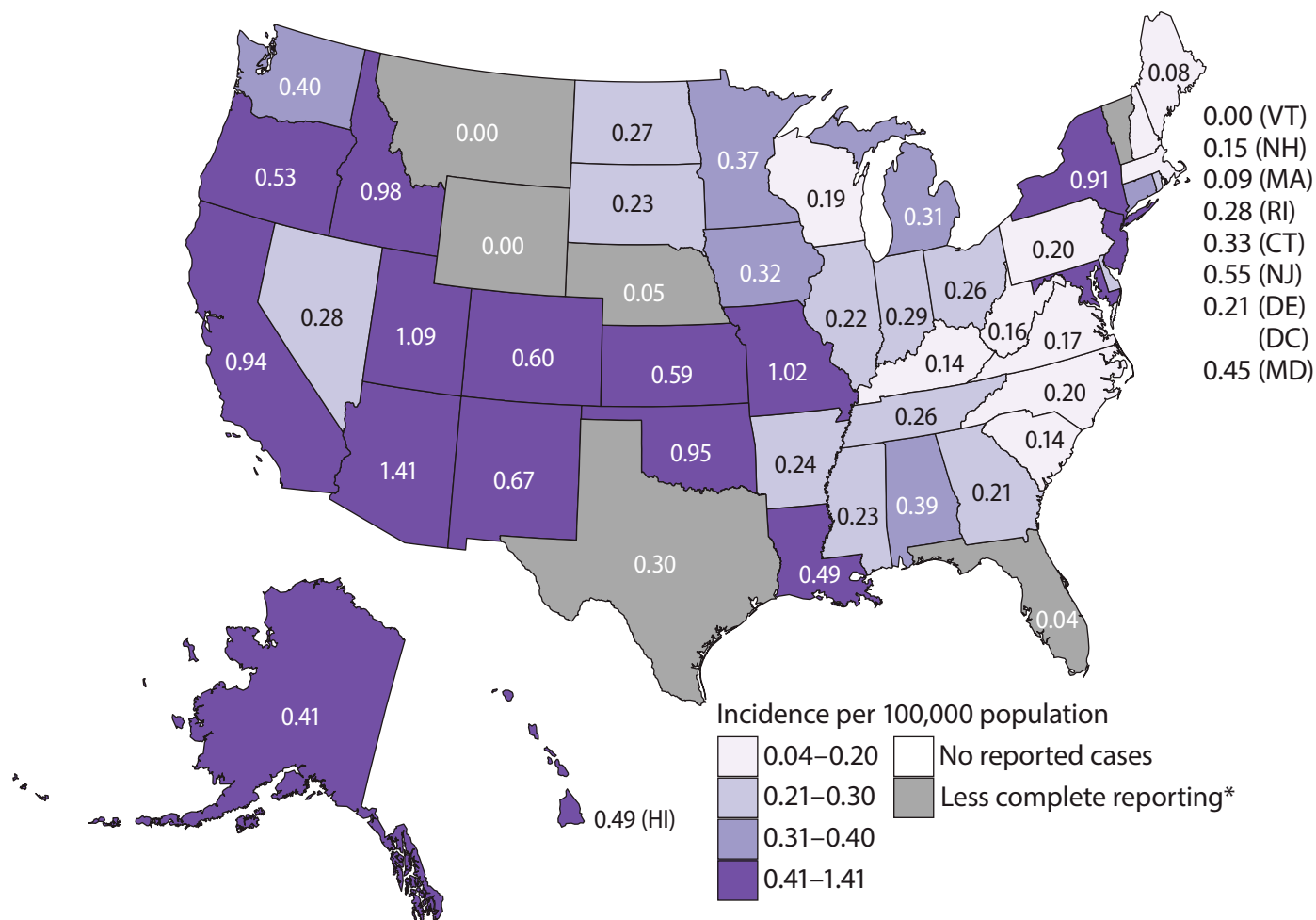
Figure 2f. Incidence rate of culture-confirmed human *Salmonella* serotype I 4,[5],12:i:- infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 2,189)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2f_i4512i_irdf.csv

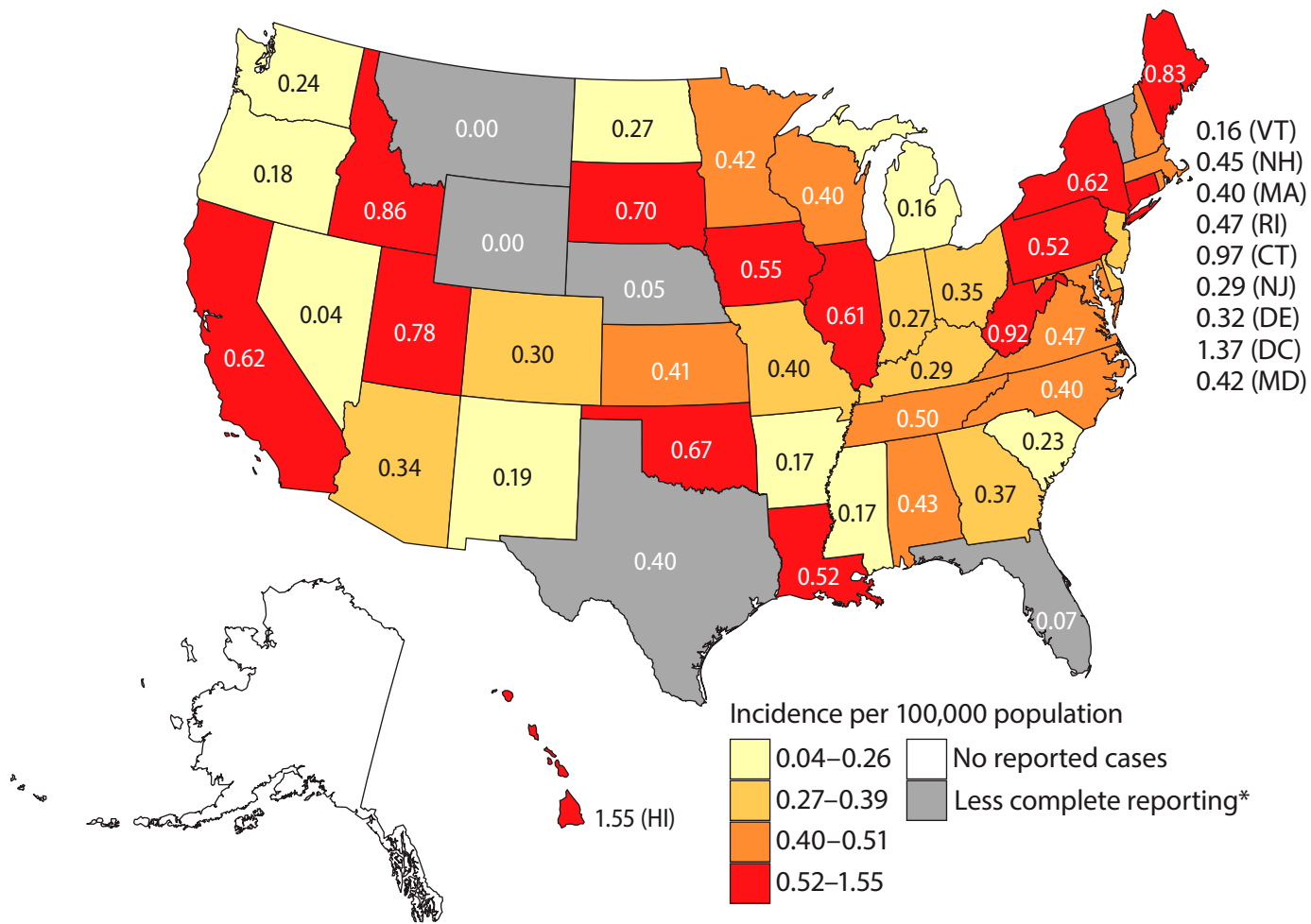
Figure 2g. Incidence rate of culture-confirmed human *Salmonella* serotype Heidelberg infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 1,430)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the [National Notifiable Diseases Surveillance System \(NNDSS\)](https://www.cdc.gov/nndss/) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2g_heidelberg_irdf.csv

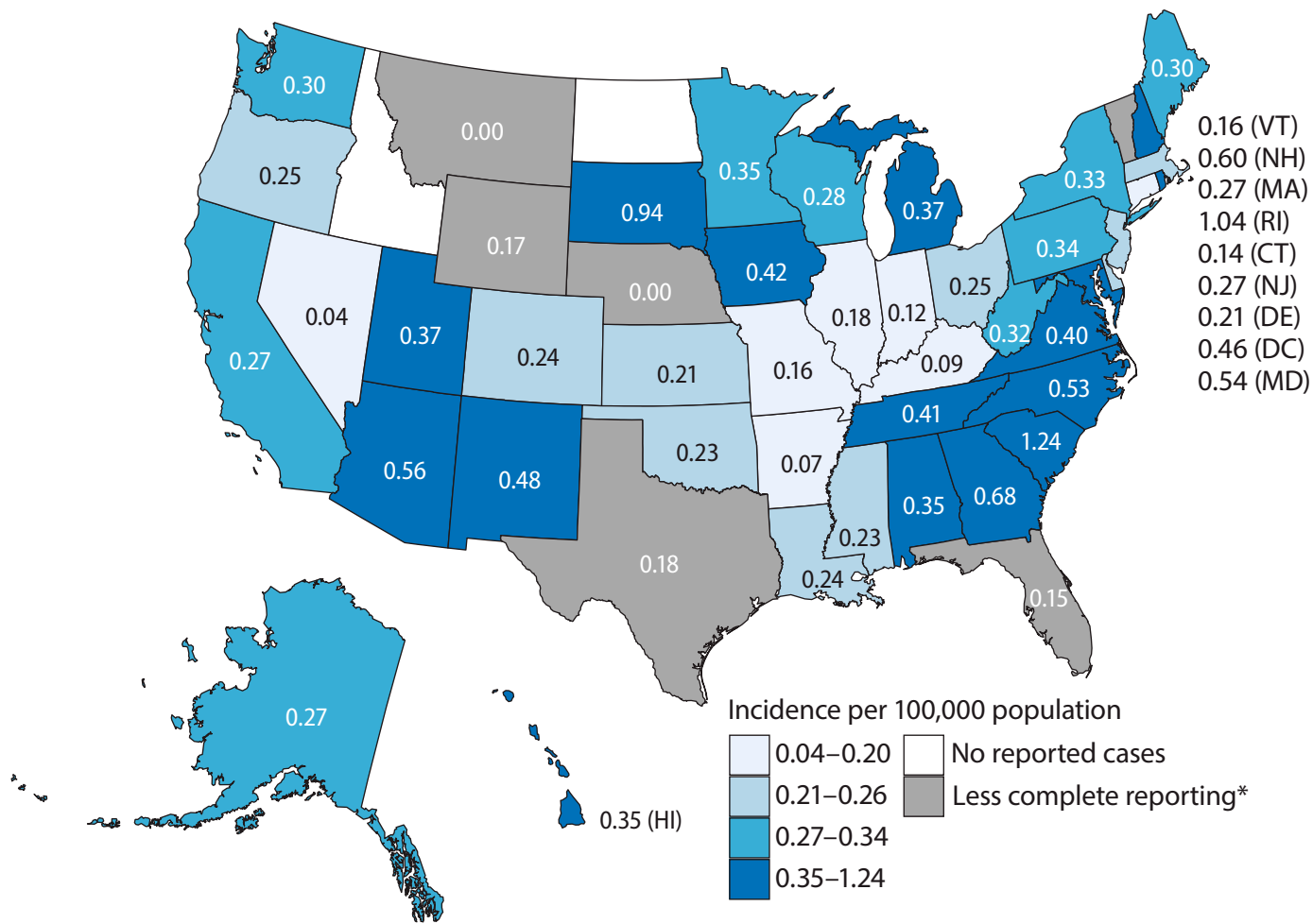
Figure 2h. Incidence rate of culture-confirmed human *Salmonella* serotype Infantis infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 1,357)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2h_infantis_irdf.csv

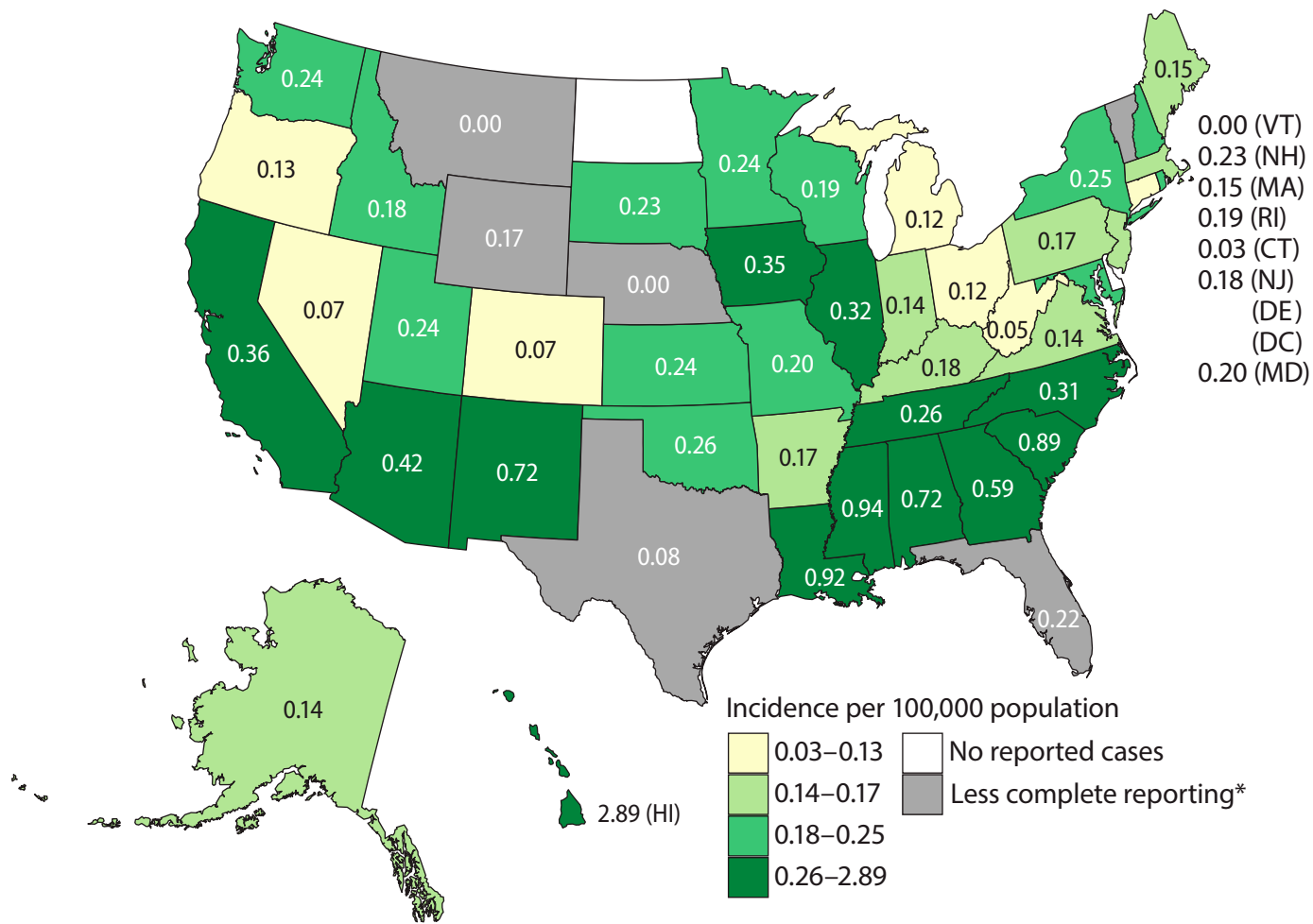
Figure 2i. Incidence rate of culture-confirmed human *Salmonella* serotype Saintpaul infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 980)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the [National Notifiable Diseases Surveillance System \(NNDSS\)](https://www.cdc.gov/nndss/) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2i_saintpaul_irdf.csv

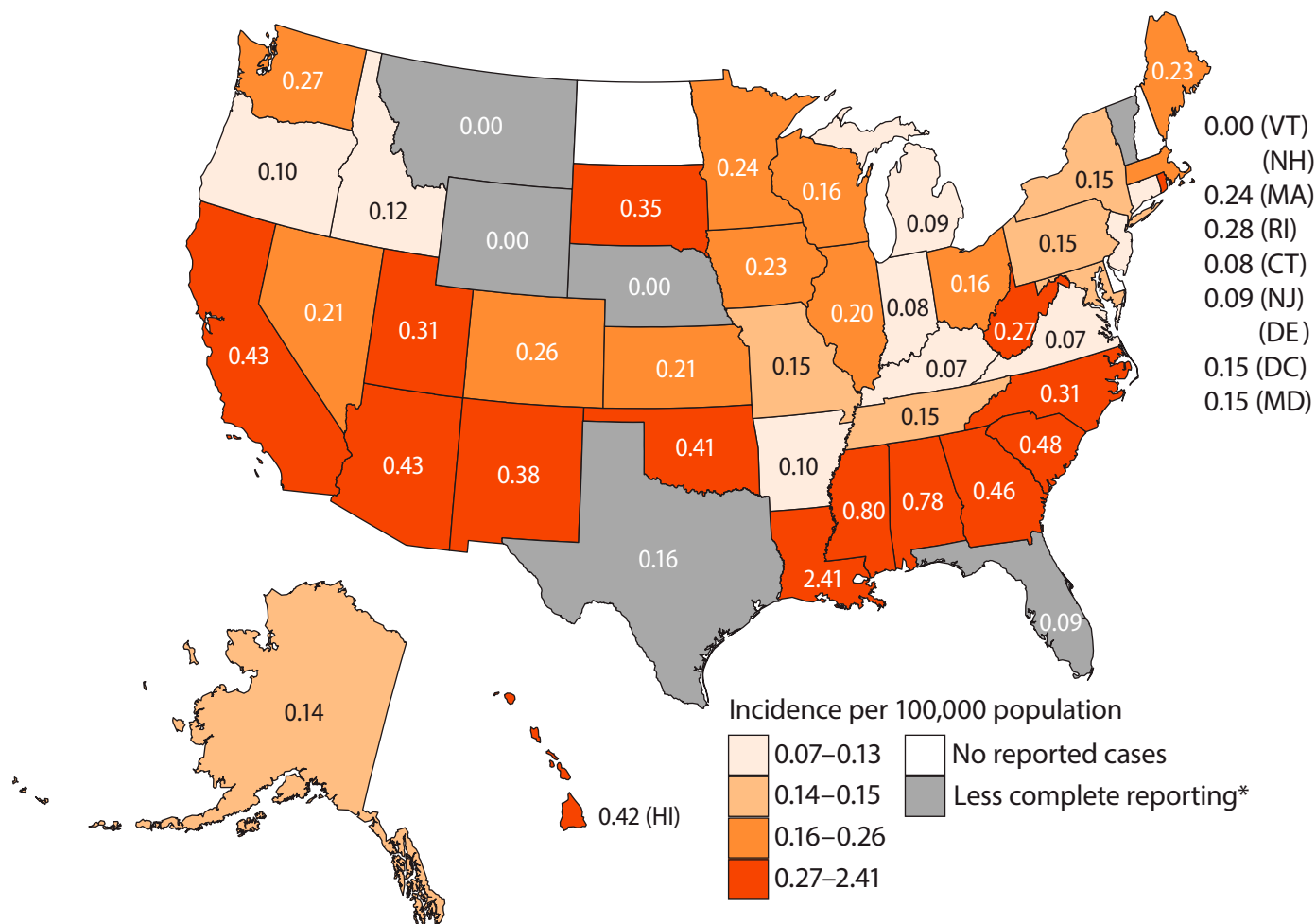
Figure 2j. Incidence rate of culture-confirmed human *Salmonella* serotype Muenchen infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 873)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2j_muenchen_irdf.csv

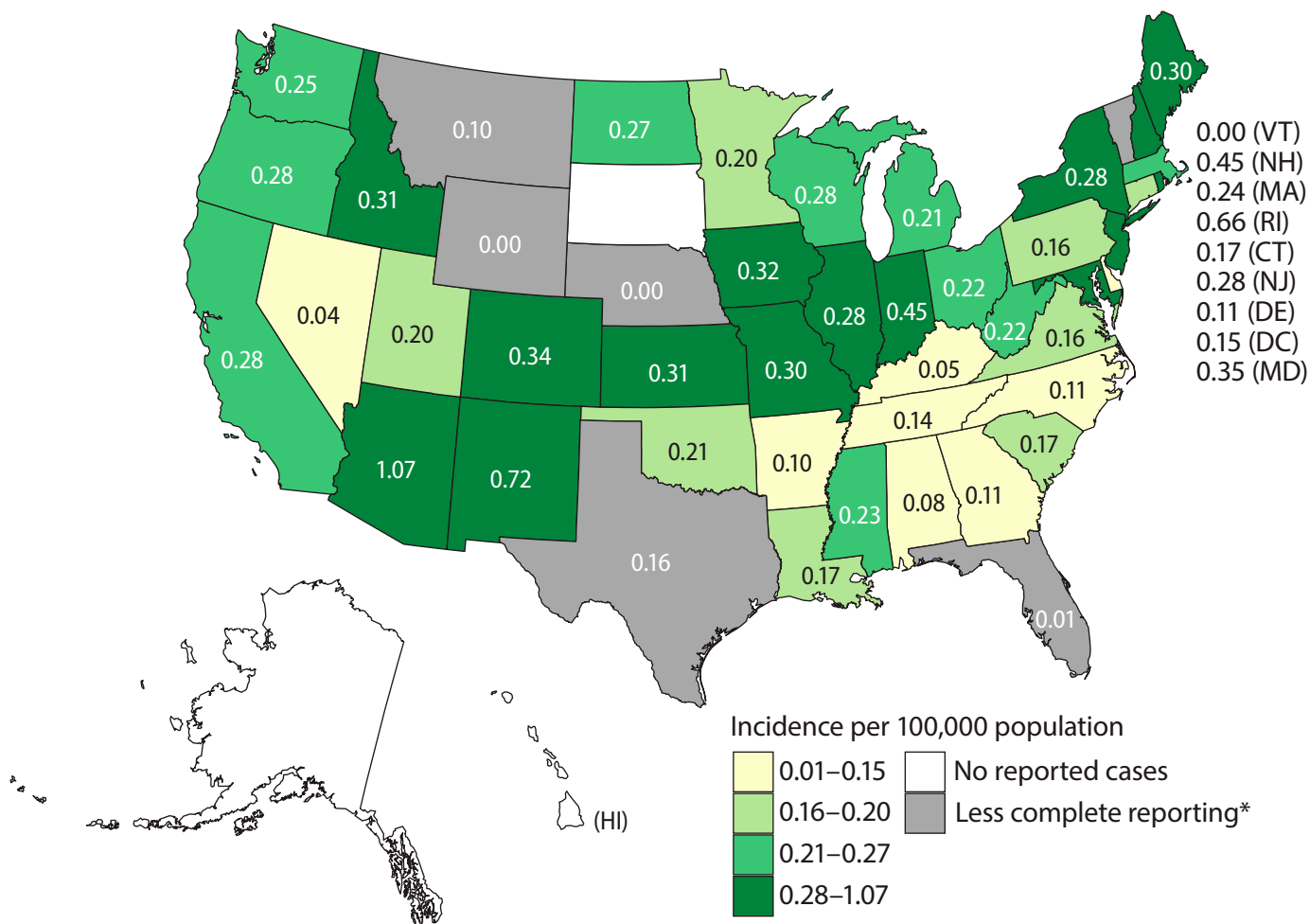
Figure 2k. Incidence rate of culture-confirmed human *Salmonella* serotype Montevideo infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 841)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the [National Notifiable Diseases Surveillance System \(NNDSS\)](https://www.cdc.gov/nndss/) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2k_montevideo_irdf.csv

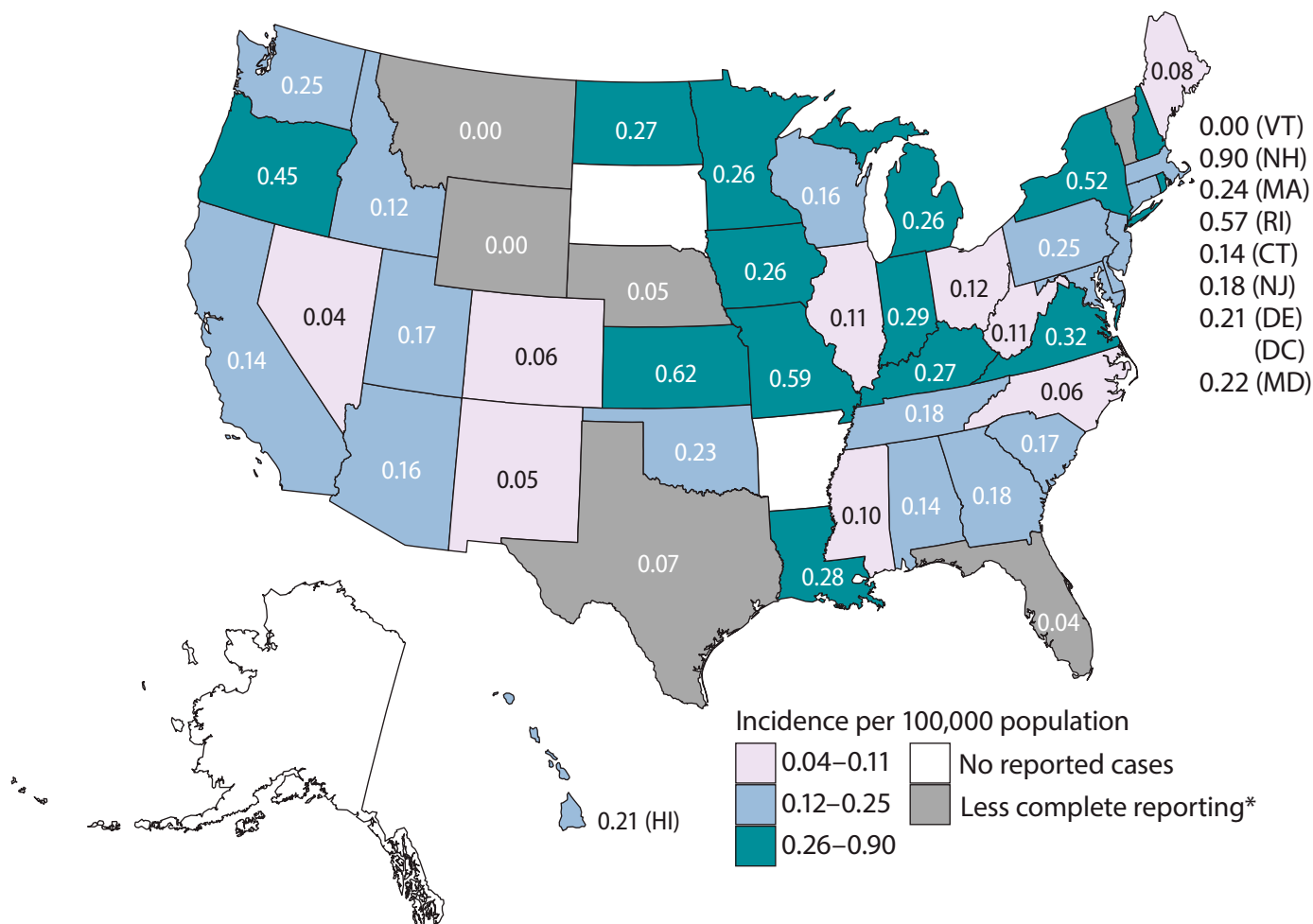
Figure 2I. Incidence rate of culture-confirmed human *Salmonella* serotype Oranienburg infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 728)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the [National Notifiable Diseases Surveillance System \(NNDSS\)](https://www.cdc.gov/nndss/) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2I_oranienburg_irdf.csv

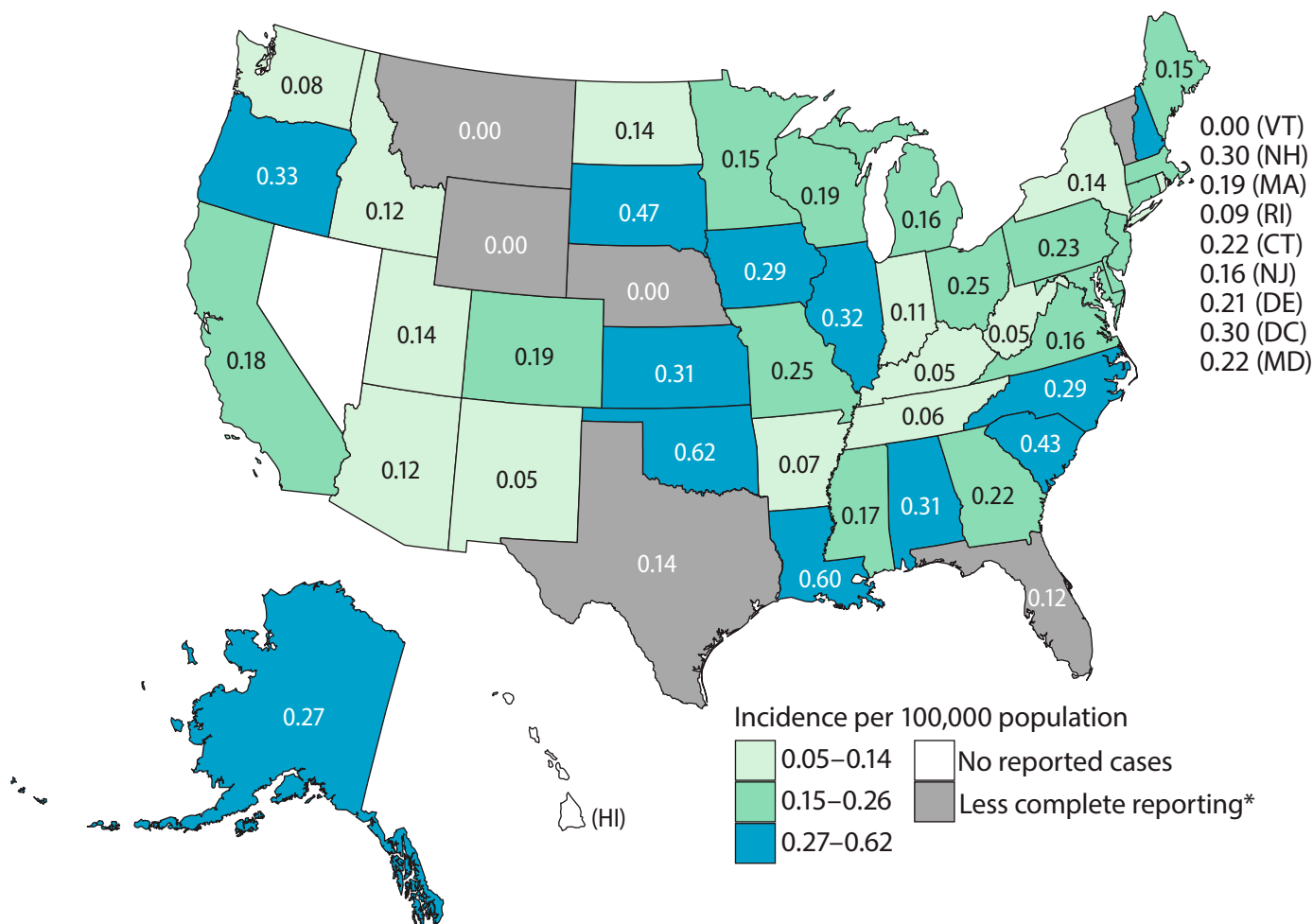
Figure 2m. Incidence rate of culture-confirmed human *Salmonella* serotype Thompson infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 626)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2m_thompson_irdf.csv

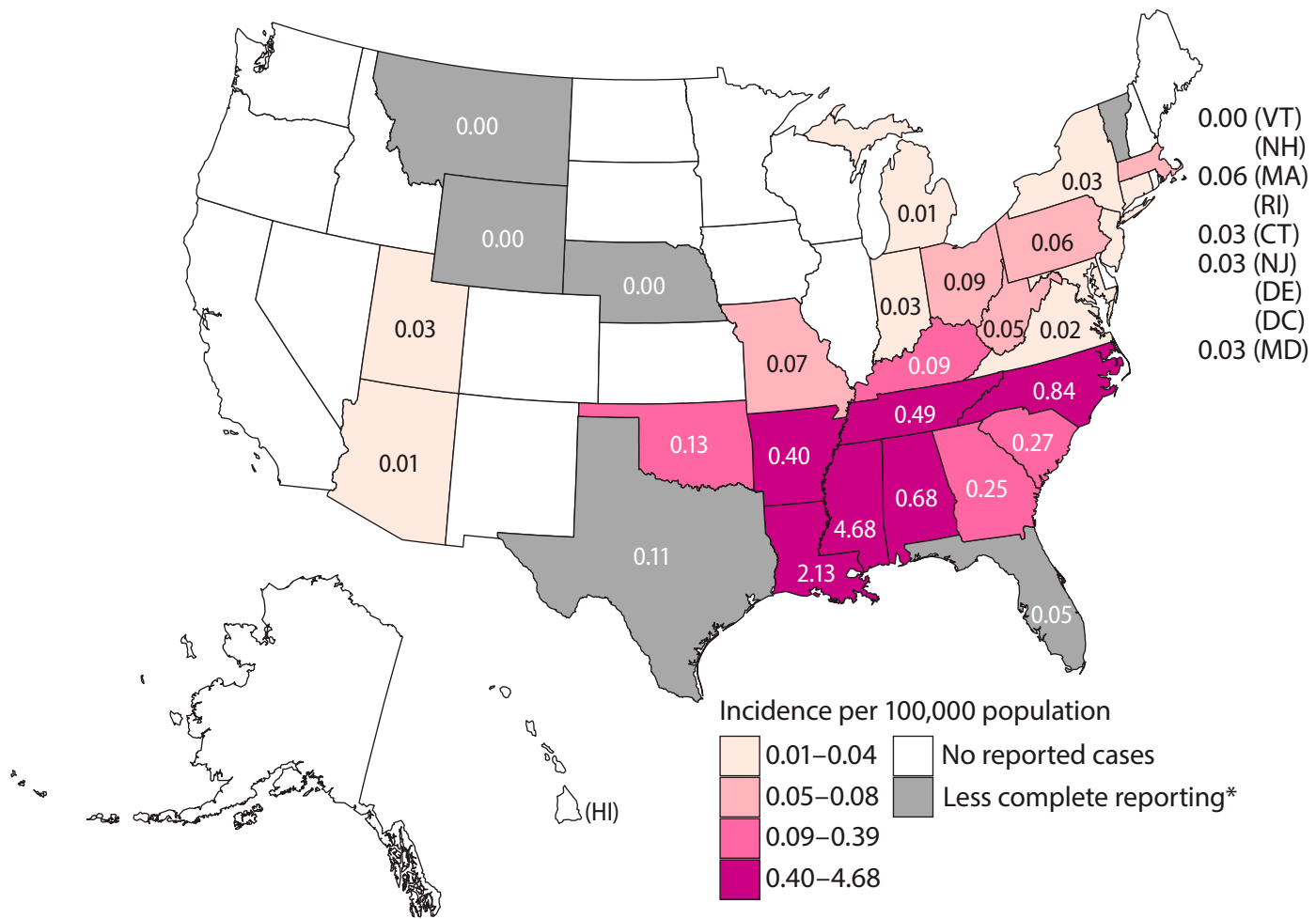
Figure 2n. Incidence rate of culture-confirmed human *Salmonella* serotype Braenderup infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 610)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the [National Notifiable Diseases Surveillance System \(NNDSS\)](https://www.cdc.gov/nndss/) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2n_braenderup_irdf.csv

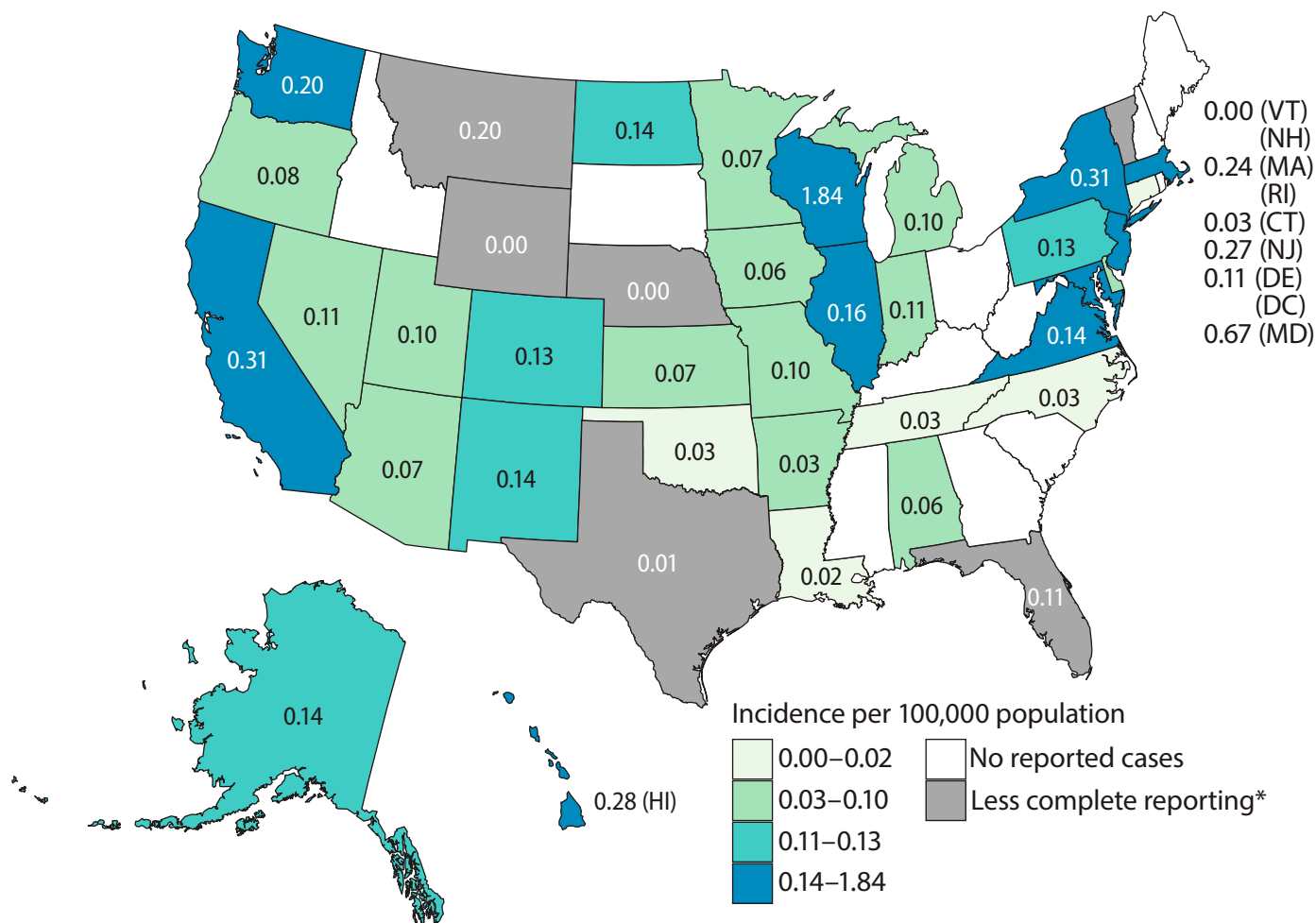
Figure 2o. Incidence rate of culture-confirmed human *Salmonella* serotype Mississippi infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 532)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2o_mississippi_irdf.csv

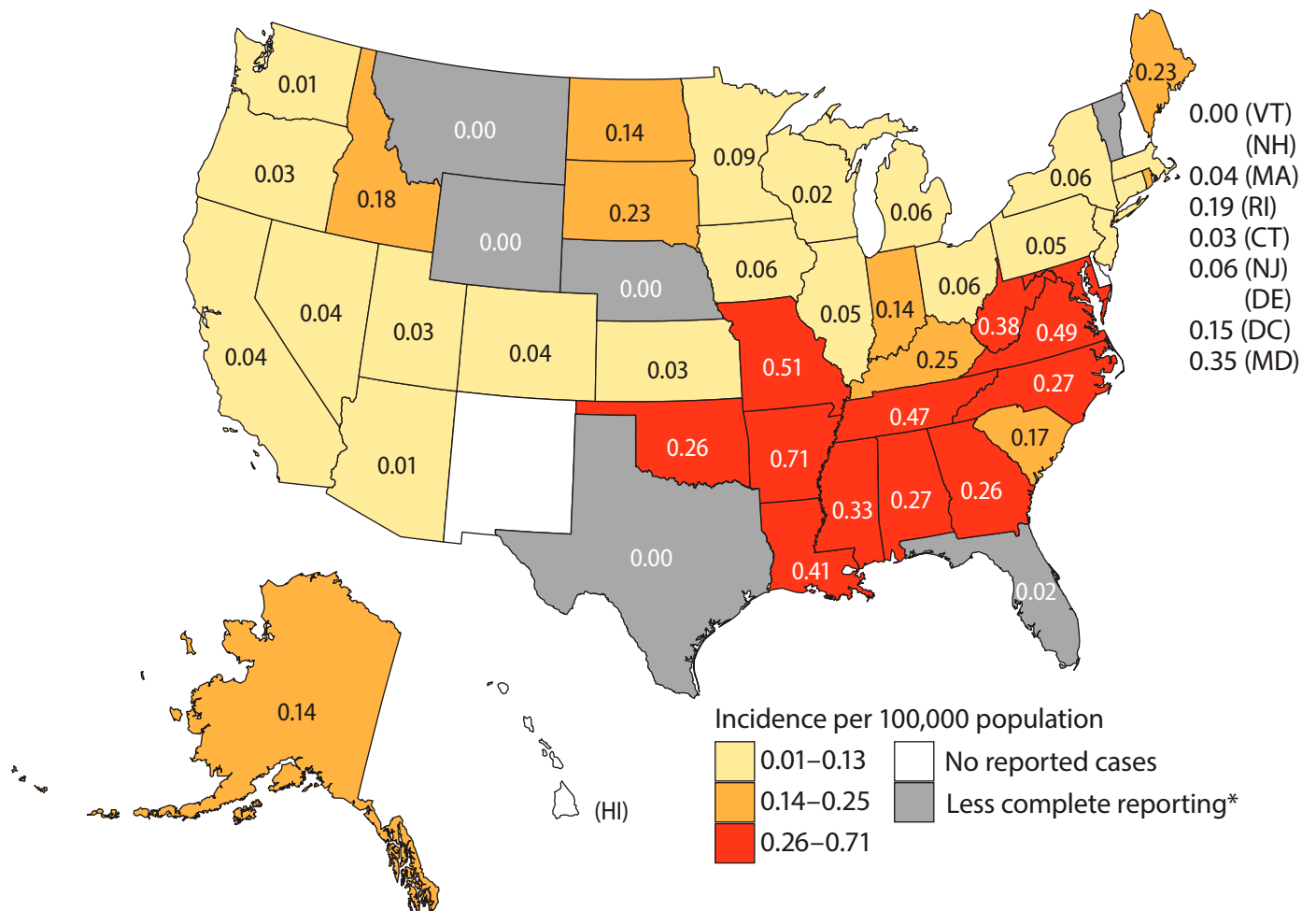
Figure 2p. Incidence rate of culture-confirmed human *Salmonella* serotype Typhi infection reported to LEADS, by reporting jurisdiction, United States, 2014 (n = 527)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEADS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEADS was less than 80% of all *Salmonella* isolates reported to LEADS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2p_typhi_irdf.csv

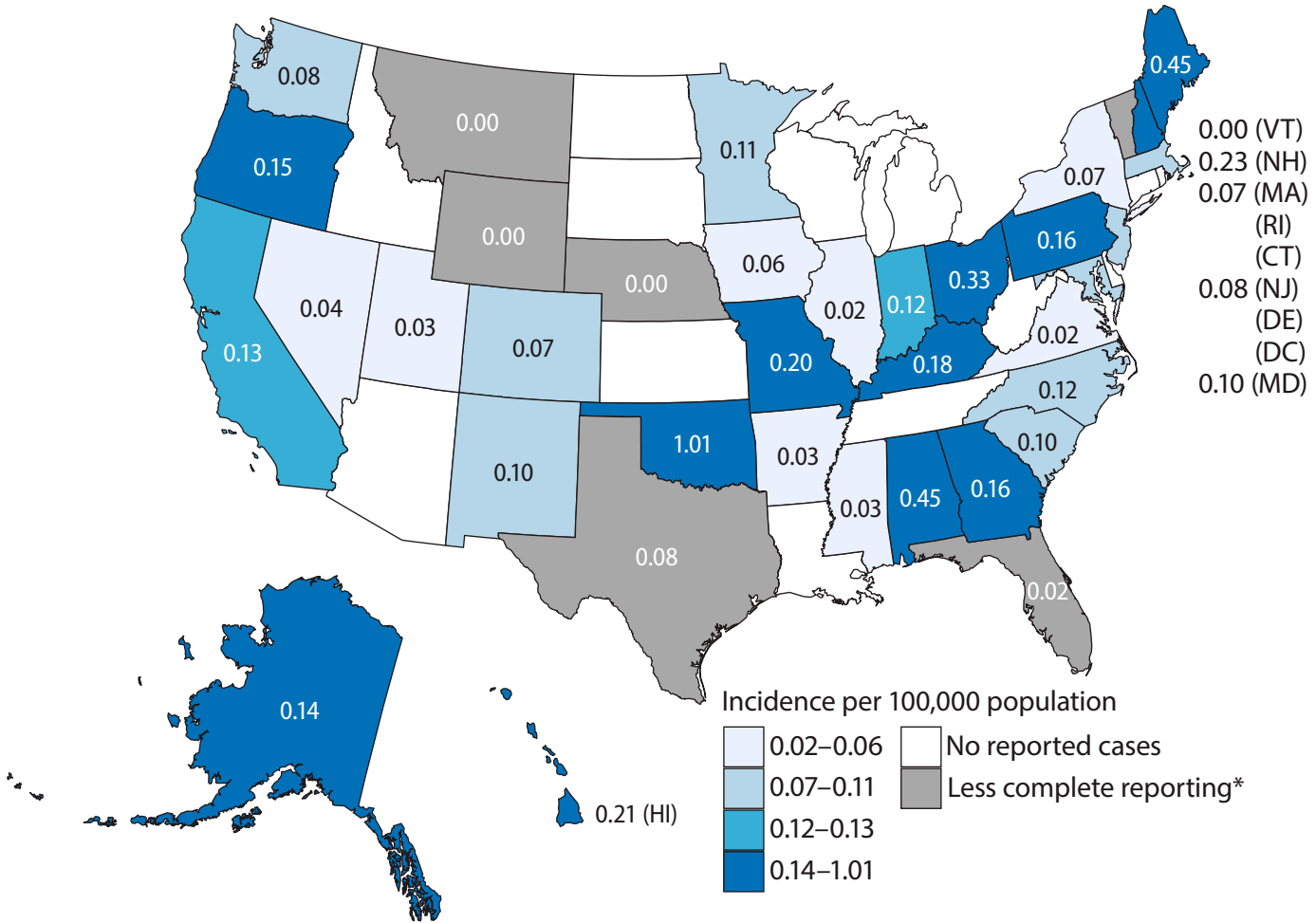
Figure 2q. Incidence rate of culture-confirmed human *Salmonella* serotype Bareilly infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 381)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the [National Notifiable Diseases Surveillance System \(NNDSS\)](https://www.cdc.gov/nndss/) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2q_bareilly_irdf.csv

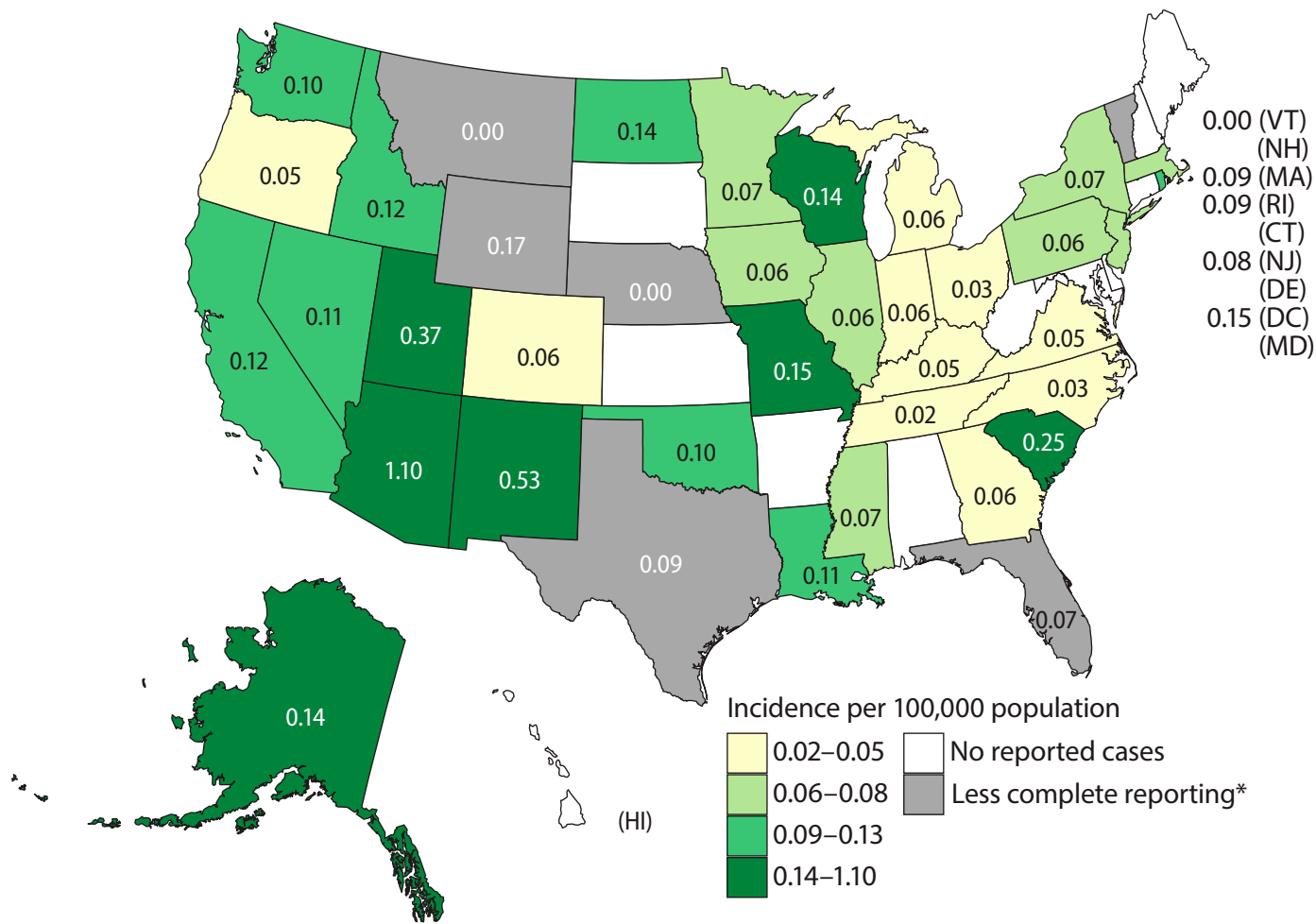
Figure 2r. Incidence rate of culture-confirmed human *Salmonella* serotype Paratyphi B var. L(+) tartrate+ infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 335)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2r_paratyphibvarltartrate_irdf.csv

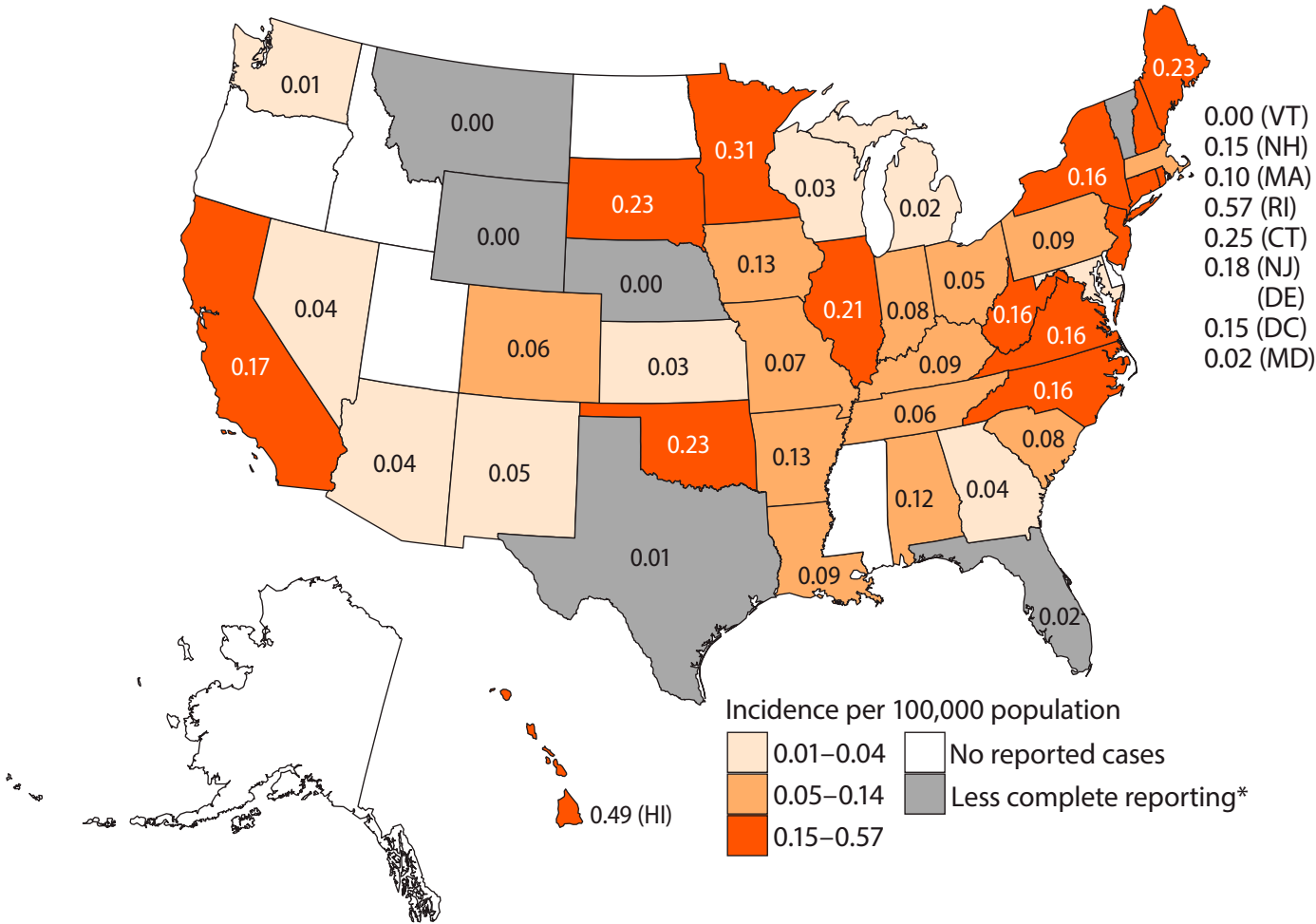
Figure 2s. Incidence rate of culture-confirmed human *Salmonella* serotype Poona infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 322)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2s_poona_irdf.csv

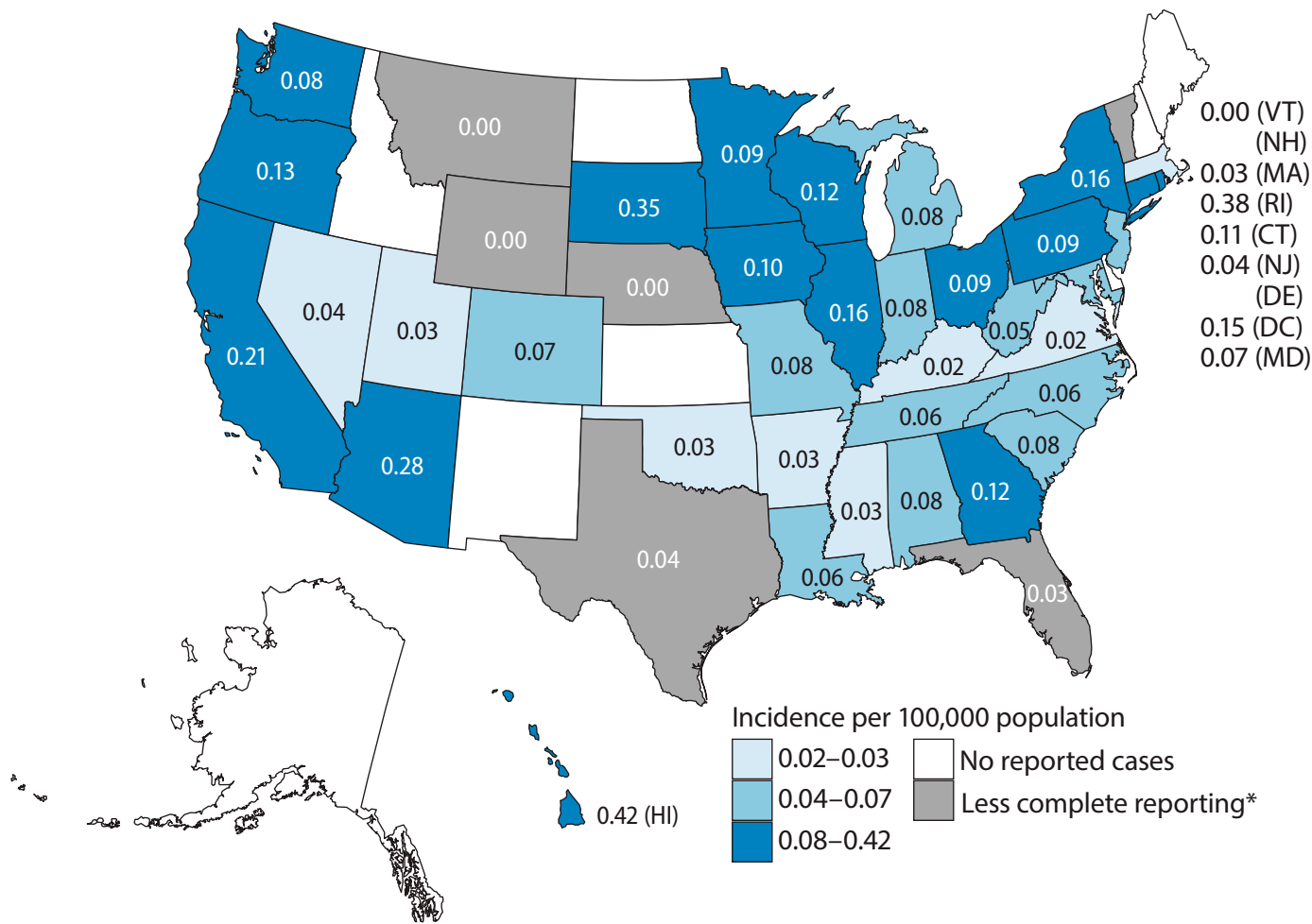
Figure 2t. Incidence rate of culture-confirmed human *Salmonella* serotype Berta infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 318)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2t_berta_irdf.csv

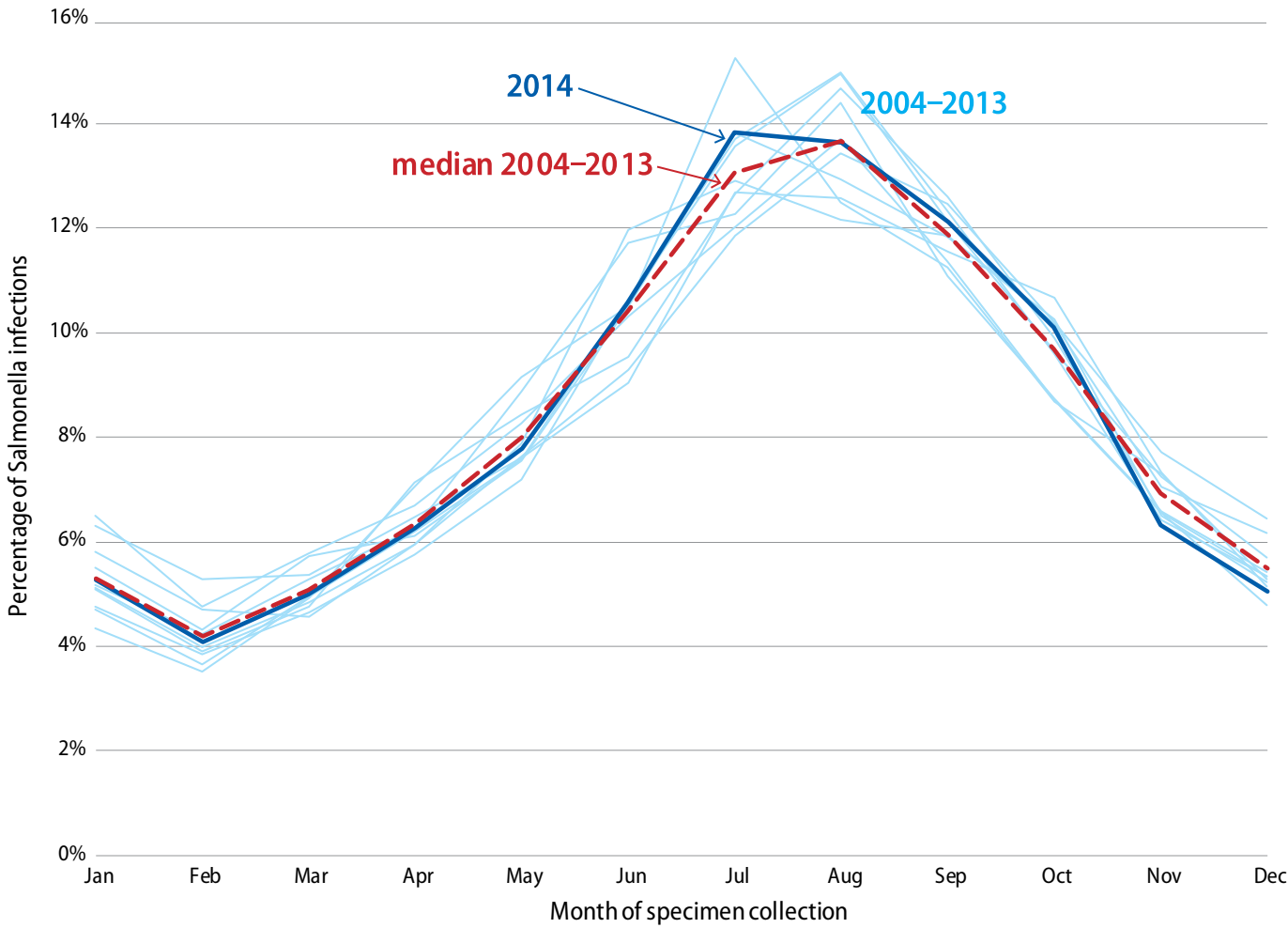
Figure 2u. Incidence rate of culture-confirmed human *Salmonella* serotype Agona infection reported to LEDS, by reporting jurisdiction, United States, 2014 (n = 307)



* States are shaded gray if a) the number of culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of salmonellosis cases reported to the National Notifiable Diseases Surveillance System (NNDSS) or b) the number of fully serotyped culture-confirmed human *Salmonella* isolates reported to LEDS was less than 80% of all *Salmonella* isolates reported to LEDS.

Note: Full data table for all states at https://www.cdc.gov/nationalsurveillance/data/salm2014/fig2u_agona_irdf.csv

Figure 3. Percentage of culture-confirmed *Salmonella* infections reported to LEDES, by month of specimen collection, United States, 2014 and median percentage during 2004 to 2013



Note: Full data tables for graphs at <https://www.cdc.gov/nationalsurveillance/data/salm2014/Fig3.xlsx>

References

1. Centers for Disease Control and Prevention (CDC). National Salmonella Surveillance Overview. Atlanta, Georgia: US Department of Health and Human Services, CDC, 2012.
2. Ryan CA, Nickels MK, Hargrett-Bean NT, et al. Massive outbreak of antimicrobial-resistant salmonellosis traced to pasteurized milk. JAMA. 1987 Dec 11;258(22):3269-74.

Recommended Citation:

Centers for Disease Control and Prevention (CDC). National *Salmonella* Surveillance Annual Report, 2014. Atlanta, Georgia: US Department of Health and Human Services, CDC, 2017.

Other Sources of National *Shigella* Surveillance Data

National Notifiable Diseases Surveillance System (NNDSS)

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

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 water exposures: <https://www.cdc.gov/healthywater/surveillance/environmental/envir-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

Telephone: 1-404-639-2206

Email: cdcinfo@cdc.gov

National Enteric Disease Surveillance: *Salmonella* Annual Report Appendices, 2014¹

Recommended Citation

Centers for Disease Control and Prevention (CDC). National *Salmonella* Surveillance Annual Report, 2014. Atlanta, Georgia: US Department of Health and Human Services, CDC, 2017.

Appendices

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¹ In mid-2012, the USDA Food Safety and Inspection Service (USDA-FSIS) began molecular serotyping, which resulted in few *Salmonella* isolates being sent to the National Veterinary Services Laboratories (NVSL) of USDA's Animal and Plant Health Inspection Service (APHIS) for traditional serotyping; those results are therefore no longer included as Appendices to this report. USDA-FSIS publishes serotypes of *Salmonella* isolated from carcasses and meat and poultry products on its website (<http://www.fsis.usda.gov/wps/portal/food/foodsafety/topics/data-collection-and-reports/microbiology/annual-serotyping-reports>).

Appendix 1. Culture-confirmed *Salmonella* infections reported to LEDS by age group and sex, 2014

Age Group (years)	Sex			Total
	Female	Male	Unknown	
<1	1819	2224	176	4219
1–4	2811	2977	177	5965
5–9	1555	1650	98	3303
10–19	1877	2179	107	4163
20–29	2501	2020	155	4676
30–39	1990	1814	105	3909
40–49	2110	1625	116	3851
50–59	2681	2007	154	4842
60–69	2276	1851	139	4266
70–79	1753	1200	102	3055
≥80	1169	633	66	1868
Unknown	100	93	140	333
All age groups	22642	20273	1535	44450

Appendix 2a. Culture-confirmed *Salmonella* infections reported to LEDS by serotype and reporting jurisdiction, 2014 (Alaska to Kansas¹)

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
I	11:-:e,n,x			1														
I	11:i:-							1										
I	11:r:-			1			1											
I	11:z10:-				1													
I	13,22:b:-													1				
I	13,23:-:1,5			1				1										
I	13,23:b:-							2				116				1		
I	16:b:-																	
I	28:i:-																	
I	3,10:-:1,5											1						
I	3,10:-:l,w							1										
I	3,10:e,h:-					1		1										
I	3,10:l,v:-					1		2										
I	3,10:r:-					2												
I	38:k:-											1						
I	4,[5],12:-:1,2					7		2								1		
I	4,[5],12:-:1,5							1										
I	4,[5],12:-:1,7			1														
I	4,[5],12:-:e,n,z15																	
I	4,[5],12:b:-		1	2	1	38		2				4		12		12		
I	4,[5],12:d:-					1						1				3		
I	4,[5],12:e,h:-							4						1				
I	4,[5],12:i:-		25	22	73	356	47	31	1	4		67	39	53	2	143	12	
I	4,[5],12:l,v:-					1												
I	4,[5],12:r:-			1		1												
I	40:-:e,n,x			1														
I	6,7:-:1,2																	
I	6,7:-:1,5			1		1		4								6		
I	6,7:-:e,n,x											1						
I	6,7:a:-							2										
I	6,7:b:-											2						
I	6,7:c:-																	
I	6,7:d:-							1										
I	6,7:e,h:-							3										
I	6,7:k:-					9		3				1				1		
I	6,7:l,w:-							1										
I	6,7:r:-							10										
I	6,7:y:-							4										
I	6,7:z10:-							1										
I	6,8:-:1,2							1										
I	6,8:-:1,5		1															

¹ The key to state name abbreviations can be found at http://www.census.gov/geo/reference/ansi_statetables.html.

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
I 6,8:-:e,n,x								1										
I 6,8:d:-						1						2				1		
I 6,8:e,h:-								6										
I 6,8:i:-															1			
I 6,8:z10:-																		
I 9,12:-:1,5				1		2		3										
I 9,12:-:e,n,x								1										
I 9,12:a:-								1										
I 9,12:e,h:-																		
I 9,12:g,z51:-																		
I 9,12:i:-																		
I 9,12:l,v:-																		
I 9,12:l,z28:-			1	1				3				4						
I Abaetetuba																1		
I Aberdeen						1							2					
I Abony			1			4	1							1				
I Adelaide					1	86	2	4			1	3	10			10	3	1
I Adeoyo								1										
I Agama																2		
I Agbeni					1	5			1			1		2		10	1	
I Ago					1													
I Agona			4	1	19	79	4	4	1		5	12	6	3		22	5	
I Agoueve																		
I Alabama			1															
I Alachua							1				2	1			2	1		
I Albany				2	2	3	2					1				2		
I Albert																1		
I Altona					4	2								1				
I Amager																		
I Amsterdam																		
I Anatum			3	2	16	75		3			10	4	2	2	1	7	3	2
I Anecho		1														1		
I Anfo						2												
I Apapa					1											1		
I Apeyeme						1												
I Arapahoe																		
I Arechavaleta				1							2	1						
I Bahrenfeld																		
I Baildon			1	1							16	3		1		4	1	2
I Bareilly		1	13	21	1	17	2	1	1		3	25		2	3	7	9	1
I Barranquilla																		
I Bassadji				1														1
I Benin																1		

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
I Berta			6	4	3	66	3	9	1		4	4	7	4		28	5	1
I Birkenhead													1					
I Bispebjerg			2															
I Blijdorp																		
I Blockley					6	7	1	2								2		
I Bochum																1		
I Bonariensis							1											
I Bonn																		
I Bournemouth												1						
I Bouso																		
I Bovismorbificans				1		17					1	1		1		6	7	
I Braenderup	2	14	2	8	68	10	8	2	2	23	23		9	2	40	7	8	
I Brandenburg				4	13	3		2	1		1	3	1	1	2	1		
I Brazil											1							
I Bredeney		7	2	1	3	2						1	1			2	1	
I Brunei																1		
I Bukavu																		
I Buzu																		
I Canada																		
I Cannstatt						1												
I Carmel						2						1						
I Carrau							1				2					1		
I Cerro						10						1	1				1	
I Chailey						5						1				3		
I Chester					4	11					2	3	4			2		
I Chiredzi														1				
I Choleraesuis																		
I Choleraesuis var. Kunzendorf																		
I Clackamas																		
I Coeln					1	1										2		
I Colindale						1												
I Colorado							1											
I Concord						2												
I Corvallis	1			1	3			1					3	1		1		
I Cotham	1				7	2					1	2		4	2	5	2	3
I Cubana					1	4												
I Cullingworth																		
I Curacao																1		
I Daytona												1						
I Denver					3													
I Derby	1	4	1	1	23	1						2	3			7	2	
I Djakarta																		

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
I Dublin			1		9	43	5	1			2	3	3	1	3	3	1	
I Duisburg						1												
I Durban						1						1						
I Durham																		
I Ealing					1	1	1				1				2	2		2
I Eastbourne						2		1	1			1						
I Ebrie																		
I Edinburg																		
I Elisabethville						1												
I Emek												1						
I Enteritidis		21	272	60	185	1005	134	112	22	24	110	270	52	80	57	493	212	59
I Eppendorf																		
I Essen				1														
I Farmsen																		
I Florida											3							
I Fluntern					1	3	1										3	
I Freetown																1		
I Fresno																		
I Galiema																		
I Gaminara			1		8	5	2	2			8	6				2	4	1
I Gatuni							1											
I Georgia																		
I Give			6	2	11	7	1						6		1			
I Glostrup																1		
I Goettingen																		
I Goldcoast						1												
I Good																		
I Grumpensis																		
I Guinea					1						1							
I Hadar			1	1	6	20	4	3				1		2		9	2	1
I Haelsingborg																		
I Haifa																		
I Hartford			5	3		2	7	3	1		4	5		3		7	4	
I Hato																		
I Havana					1	13			1				1			4		
I Heidelberg		3	19	5	96	361	32	11		2	8	21	9	10	16	30	19	14
I Herston					1							1						
I Hillingdon																		
I Hindmarsh																		
I Holcomb																		
I Horsham																		
I Hull						2												
I Hvittingfoss						10	1	1			2	2				1		

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
I Idikan						1												1
I Indiana						3								1	2			
I Infantis			21	4	23	238	16	35	9	3	13	37	22	17	14	76	18	11
I Inverness			1								3	5						
I Irumu						1	1											
I Isangi						2												
I Ituri																		
I Jangwani							1											
I Javiana		1	137	63	38	76	7	20	1	21	134	391	1	5	4	29	13	3
I Jodhpur																		
I Johannesburg				1		14						1				3	1	
I Kaapstad																		
I Kedougou																		
I Kentucky				2	3	13	1		1			2	1	1		7	2	
I Kiambu			1	1		1	1				1	3		2				1
I Kimberley																		
I Kingabwa																		
I Kingston															1			
I Kintambo						1												
I Kisangani																		
I Kisarawe																		
I Kisii																		
I Kitenge																		
I Koketime						1												
I Kokomlemle																1		
I Kottbus			1			3	1											
I Krefeld																	1	
I Kua								1										
I Kuntair														1				
I Lagos						2												
I Landwasser																		
I Larochelle						2												
I Lattenkamp																		
I Lexington																		
I Limete																1		
I Litchfield			5	2	3	13	2	1		1	9	2		2		4	4	
I Liverpool				1		3	1					1				3	2	
I Livingstone															2			
I Lomalinda		1				24										1		
I Lome																		
I Lomita																		
I London						3	1					1	1					
I Luciana			1									1						

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
I Maastricht																		
I Madelia																		
I Manhattan				1	1	35	1					1				3	1	1
I Maricopa					1													
I Marshall																1		
I Matadi																		
I Matopeni						3												
I Maumee																		
I Mbandaka			9	3	13	21	7	1		2	2	6		4	1	4	7	1
I Meleagridis					1	4					1							
I Menston																		
I Miami		1	1			2	3	1			34	10				2	1	
I Michigan						1	1											
I Mikawasima																		
I Minnesota					4	3					11					1		
I Mississippi			32	12				1			9	24						2
I Molade																		
I Monschau						6	3							1		1	1	
I Montevideo		1	38	3	29	169	14	3	1		16	46	6	7	2	25	5	6
I Mountpleasant											1							
I Muenchen		1	37	5	28	141	4	1			41	59	42	11	3	41	10	5
I Muenster					4	5						1	1			1	1	2
I Napoli						3								1		1	3	
I Neukoelln																		
I Newmexico			1															
I Newport			117	153	95	317	39	30	5	46	111	350	11	27	8	76	37	44
I Nima						3												
I Norwich			7	18	1		1				1	3					1	3
I Nottingham											1							
I Nyanza						1												
I Oakland																	1	
I Ohio					1	13			1		1	2				16	2	
I Okatie						1												
I Onderstepoort				1														
I Oranienburg			4	3	73	106	17	6	1	1		11		9	5	32	33	8
I Oslo						17		1					17	1		2		1
I Othmarschen			4						1					1				
I Ouakam																		
I Overschie																		
I Panama		1			21	23	2	4		3	3	6	2		1	11	3	3
I Paratyphi A					2	37	3	2	2	2		4			1	7		
I Paratyphi B					4				2							7		1

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
I	Paratyphi B var. L(+) tartrate+	1	23	1		50	4				4	15	3	2		2	8	
I	Paratyphi C					1												
I	Pensacola		2									4					1	
I	Poano																	
I	Pomona					13					2	2					3	
I	Poona	1			74	48	3		1		13	6		2	2	7	4	
I	Portland																	
I	Potsdam				2	13							1			1		
I	Praha																	
I	Putten			1				1				1				3		1
I	Quiniela																	
I	Reading		4		2	8		3		1		7	2	6		1	2	
I	Redlands																	
I	Richmond							1										
I	Rissen			1	2	8	1					1			1	5	1	
I	Riverside					2												
I	Roodepoort													1				
I	Rubislaw		5	22	2	6					54	16				3	1	
I	Saarbruecken																	
I	Saintpaul	2	19	2	39	107	13	5	3	2	28	67	5	13		21	8	3
I	Sandiego				19	32	3	1	2		30			1		9		
I	Schwarzengrund		5	2	6	22	2			1	1	4	2	1		12	2	
I	Senftenberg			1	9	72	1	3			8		1		2	5		
I	Shubra											1						
I	Singapore				1	2	1									1		
I	Skansen																	
I	Soahanina																	
I	Soerenga	1		1		1	1											
I	Somone																	
I	Stanley	3		2	2	58	2	3	1		3	2	2	2	1	10	1	
I	Stanleyville																	
I	Strathcona																	
I	Suelldorf					2												
I	Sundsvall					1		1										
I	Szentes																	
I	Takoradi				1													
I	Taksony																	
I	Tallahassee		1								3	1						
I	Tamberma					1												
I	Tarshyne																	
I	Teitelkebir					2												
I	Teltow																	

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
I	Tennessee		1			3	1	1						1		1		
I	Thompson		6		11	55	3	5		2	8	18	3	8	2	13	19	15
I	Tilene						1											
I	Tornow																	
I	Toucra					1												
I	Travis				1													
I	Typhi	1	3	1	5	120	7	1			23		4	1		14	6	2
I	Typhimurium	5	160	74	97	502	99	44	12	14	47	186	33	81	26	225	88	50
I	Uganda				2	49	3	2				2			1	18	1	1
I	Urbana										2			1		1		
I	Uzaramo																	
I	Veneziana															1		
I	Virchow					21	1	1				1	1			3	3	
I	Wagenia					1												
I	Wandsworth					1												
I	Wangata			1		2												1
I	Weltevreden		2	1	2	16	1		1		1		11		2	4		
I	Westhampton			1		4												
I	Widemarsh					1												
I	Wien					1												
I	Winston																	
I	Worthington			2	3	5	1					3		1		1		
I	Wyldegreen					1												
II	21:g,[m],[s],t:-																	
II	21:z10:[z6]				2													
II	30:l,z28:z6																	
II	43:z4,z23:-																	
II	48:a:z6				1													
II	48:d:z6																	
II	50:b:z6				2	1												
II	58:c:z6																	
II	58:l,z13,z28:z6											1						
II	6,7:-:1,6						1											
II	6,7:z:e,n,x					1												
II	9,12:z29:1,5																	
II	9,12:z39:1,7					2												
IIIa	13,22:z4,z23:-					1										1		
IIIa	13,23:g,z51:-								1									
IIIa	17:z36:-																	
IIIa	18:z4,z23:-					3												
IIIa	21:g,z51:-				1	1												
IIIa	35:z29:-					1												
IIIa	40:z4,z23:-																	

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
IIIa	41:z4,z23:-					5										1		
IIIa	42:g,z51:-				1													
IIIa	44:z4,z23,z32:-					1												
IIIa	44:z4,z23:-					1												
IIIa	47:g,z51:-				1													
IIIa	48:g,z51:-					1						2				1		
IIIa	48:z4,z23:-					1												
IIIa	48:z4,z24:-					3												
IIIa	50:z4,z23:-		1															
IIIa	51:z4,z23:-		3									1						
IIIa	53:z4,z23:-															1		
IIIa	56:z4,z23:-					2										2		
IIIa	59:z4,z23:-															1		
IIIb	16:z10:e,n,x,z15																	
IIIb	35:k:e,n,x,z15																	
IIIb	35:l,v:z35											1						
IIIb	35:r:e,n,x,z15					1												
IIIb	42:(k):z35					3												
IIIb	47:k:-		1															
IIIb	47:k:z35																	
IIIb	47:k:z53					1												
IIIb	47:r:z53																	
IIIb	48:c:z					2												
IIIb	48:i:z					4												
IIIb	48:z4,z24:-																	
IIIb	50:k:-																	
IIIb	50:k:z				1	1												
IIIb	50:r:z				3	4												
IIIb	53:z10:z35					1						1				1		
IIIb	60:i:e,n,x,z15																	
IIIb	60:k:z35																	
IIIb	60:r:e,n,x,z15																	
IIIb	60:r:z					1												
IIIb	61:-:1,5,[7]																	
IIIb	61:c:z35					2										1		
IIIb	61:i:z															1		
IIIb	61:k:1,5,[7]					1												
IIIb	61:l,v:-																	
IIIb	61:l,v:1,5,7					9												
IIIb	61:l,v:z35					2										1		
IIIb	61:z52:z53																	
IIIb	65:(k):z																	
IIIb	65:z10:e,n,x,z15															2		

Subspecies	Serotype	AK	AL	AR	AZ	CA	CO	CT	DC	DE	FL	GA	HI	IA	ID	IL	IN	KS
IV	11:z4,z23:-																	
IV	16:z4,z32:-			1														
IV	17:z29:-																	
IV	40:z4,z23:-																	
IV	40:z4,z24:-																	
IV	40:z4,z32:-																	
IV	43:z4,z23:-																	
IV	44:z36,[z38]:-											1						
IV	44:z4,z23:-					7						1				1	1	
IV	44:z4,z24:-					1												
IV	44:z4,z32:-																	
IV	45:g,z51:-																	
IV	48:g,z51:-								2			1				1		
IV	50:g,z51:-				6	5	1					1			1			
IV	50:z4,z23:-						1	1				1						
IV	6,7:z4,z23:-																	
IV	6,7:z4,z24:-																	
V	bongori ser. 48:z35:-															1		
V	bongori ser. 48:z81:-			1														
	Partially serotyped	7	5		15	1	14	2				11	3	3	1	4		
	Rough, mucoid, and/or nonmotile isolates			1	7	31	3	6				7		6		3		1
	Unknown	1		16	41	21	8	1	1	23	245	65		2		1	2	
	Total	59	1047	549	1180	5084	577	449	82	155	1076	2003	328	419	177	1635	605	261

Appendix 2b. Culture-confirmed *Salmonella* infections reported to LEDS by serotype and reporting jurisdiction, 2014 (Kentucky to Nevada¹)

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
I	11:-:e,n,x																	
I	11:i:-																	
I	11:r:-																	
I	11:z10:-																	
I	13,22:b:-																	
I	13,23:-:1,5																	
I	13,23:b:-		2				1	1				21						
I	16:b:-															1		
I	28:i:-							1										
I	3,10:-:1,5																	
I	3,10:-:l,w								1									
I	3,10:e,h:-				6													
I	3,10:l,v:-		1															
I	3,10:r:-																	
I	38:k:-																	
I	4,[5],12:-:1,2			2	12													
I	4,[5],12:-:1,5																	
I	4,[5],12:-:1,7																	
I	4,[5],12:-:e,n,z15															1		
I	4,[5],12:b:-		1	7			7	7	8	26		4				12		8
I	4,[5],12:d:-				4											2		1
I	4,[5],12:e,h:-				13													
I	4,[5],12:i:-	17	41	56	95	3	71	54	61	23		81	6		9	73		8
I	4,[5],12:l,v:-				2													
I	4,[5],12:r:-				7							1						
I	40:-:e,n,x																	
I	6,7:-:1,2				2													
I	6,7:-:1,5			11	25			1		1		1				13		
I	6,7:-:e,n,x																	
I	6,7:a:-																	
I	6,7:b:-				2													
I	6,7:c:-															1		
I	6,7:d:-				2													
I	6,7:e,h:-				3													
I	6,7:k:-			1	4		1					1				2		2
I	6,7:l,w:-				2													
I	6,7:r:-			1	7							1				1		
I	6,7:y:-		1		4		1											
I	6,7:z10:-																	
I	6,8:-:1,2			1												1		
I	6,8:-:1,5							1										

¹ The key to state name abbreviations can be found at http://www.census.gov/geo/reference/ansi_statetables.html.

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
I 6,8:-:e,n,x																		
I 6,8:d:-					2													
I 6,8:e,h:-					32		1									1		
I 6,8:i:-					2													
I 6,8:z10:-					2													
I 9,12:-:1,5				1	32			1		2								
I 9,12:-:e,n,x																		
I 9,12:a:-					5													
I 9,12:e,h:-																		
I 9,12:g,z51:-																		
I 9,12:i:-					4													
I 9,12:l,v:-									1								1	
I 9,12:l,z28:-			2		3				3	14		5				2		
I Abaetetuba																		
I Aberdeen									1									
I Abony						2												
I Adelaide			1				2	13	1	1		7	3			3		
I Adeoyo																		
I Agama																		
I Agbeni					2		3	2		2						2		
I Ago																		
I Agona		1	3	2	4		8	5	5	1		6				4		1
I Agoueve				1														
I Alabama																		
I Alachua								1				1						
I Albany					1			1				1						
I Albert																		
I Altona									1								3	
I Amager																		
I Amsterdam							1											
I Anatum			13	7	5		2	5	6	2		3			2	5	2	
I Anecho																		
I Anfo																		
I Apapa							1						2					
I Apeyeme																		
I Arapahoe												1						
I Arechavaleta																		
I Bahrenfeld																		
I Baildon		2		1				1				2			1	3		
I Bareilly		13	19	4	22	3	6	5	31	10		27	1			5		1
I Barranquilla																		
I Bassadji																		
I Benin																		

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
I Berta		4	4	6		3	2	17	4			17			2	14	1	1
I Birkenhead																		
I Bispebjerg																		
I Blijdorp									1									
I Blockley				4						1		2				14		1
I Bochum																		
I Bonariensis									2									
I Bonn							1											
I Bournemouth																		
I Bouso																		
I Bovismorbificans		1		2	2		4	2	1						1			
I Braenderup		2	28	13	12	2	16	8	17	5		28	1		4	14	1	
I Brandenburg		1		2	2		1	2	4	1		1				1		
I Brazil																		
I Bredeney								1	1			4				2	1	
I Brunei																		
I Bukavu					2													
I Buzu																		
I Canada																		
I Cannstatt																1		
I Carmel																2		
I Carrau							1					2			1			
I Cerro		1					1											
I Chailey		2						5										
I Chester				3			1	2	1			2						
I Chiredzi																		
I Choleraesuis																		
I Choleraesuis var. Kunzendorf																		
I Clackamas																		
I Coeln																1		
I Colindale																		
I Colorado																		
I Concord																		
I Corvallis					2				1			1			1			
I Cotham		3		1			1					1	1					1
I Cubana								1	1			1						
I Cullingworth																		
I Curacao																		
I Daytona												1						
I Denver																		
I Derby			1	3			3		1	1		7			2	5		
I Djakarta												1						

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
I Dublin		1	1	5	9	2	5	1	4	1		2	4		2	6	1	1
I Duisburg				1														
I Durban				1														
I Durham																		
I Ealing							2					1				2		
I Eastbourne				1			1					1				1		1
I Ebrie																		
I Edinburg																		
I Elisabethville																		
I Emek																		
I Enteritidis		117	87	309	472	37	329	209	302	89		272	32	1	57	304	42	40
I Eppendorf																		
I Essen																		
I Farmsen																		
I Florida					1							2						
I Fluntern																		
I Freetown																		
I Fresno																		
I Galiema																		
I Gaminara		1	21	1						5		5				1		
I Gatuni																		
I Georgia									1									
I Give			29	3	6				1	6		5				2	1	
I Glostrup																		
I Goettingen																		
I Goldcoast												1						
I Good																1		
I Grumpensis								1										
I Guinea									2							1	1	
I Hadar		1	1	5		1	7	7	10	2		3	2		2	18	1	
I Haelsingborg																		
I Haifa					2													
I Hartford		1	3	2		2	12	5	6	4		12			1	3		
I Hato												2						
I Havana				2		1	1	1				2						1
I Heidelberg		6	23	7	26	1	30	20	66	7		20	2	1	2	48	14	8
I Herston																		
I Hillingdon					1													
I Hindmarsh												1						
I Holcomb							1					1						
I Horsham																	1	
I Hull																		
I Hvittingfoss		1	10					1				1				2		

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
I Idikan												1				1		
I Indiana					1							3						
I Infantis		12	23	28	25	11	16	23	29	6		41	2	1	6	26	4	1
I Inverness			9									10						
I Irumu																		
I Isangi							1	1								2		
I Ituri																		1
I Jangwani																		
I Javiana		9	68	17	172	6	20	19	29	158		306	2		10	74	29	2
I Jodhpur																1		
I Johannesburg			1					4				6						
I Kaapstad					2													
I Kedougou								1										
I Kentucky			1	3	4		3	3	2			3			2	2		
I Kiambu			1	4	6		1	1	3							1		
I Kimberley																		
I Kingabwa							1											
I Kingston																		
I Kintambo							1											
I Kisangani																		
I Kisarawe			1		1		1											
I Kisii							1											
I Kitenge							1											
I Koketime																		
I Kokomlele				1														
I Kottbus							1									1		
I Krefeld																		
I Kua																		
I Kuntair																		
I Lagos							1											
I Landwasser													1					
I Larochelle																		
I Lattenkamp									1									
I Lexington																		
I Limete																		
I Litchfield			6	2	7		4	5	5	2		2			1	8		1
I Liverpool						1						1						
I Livingstone																	1	
I Lomalinda			1	1			1		4									
I Lome																		
I Lomita									1									
I London				6	2					1		3				3		
I Luciana																		

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
I Maastricht												1						
I Madelia																		
I Manhattan			1	1			1	1	2			9			1	2		1
I Maricopa																		
I Marshall																		
I Matadi										1								
I Matopeni																		
I Maumee												1						
I Mbandaka		8	1	3	4	1	15	3	2	12		1	3			4	2	2
I Meleagridis												1			1			
I Menston																		
I Miami				3		1	3	9		2		9						
I Michigan																		
I Mikawasima																		
I Minnesota									1			4				1	1	
I Mississippi		4	99	4	2		1		4	142		90				3		
I Molade																		
I Monschau				2			2		1									
I Montevideo		5	112	17	9	3	9	13	9	24		32				7	8	6
I Mountpleasant																		
I Muenchen		8	43	10	11	2	12	13	14	28		30			3	15	15	2
I Muenster		1				1			2							1		
I Napoli																		
I Neukoelln																		
I Newmexico												1						
I Newport		39	208	27	225	15	71	35	106	164		407	6	1	21	106	26	2
I Nima		1																
I Norwich		3	3	14	3			1	13	30					1	7	1	
I Nottingham																		
I Nyanza																		
I Oakland				1														
I Ohio			2	1			1		1	1		3				1		
I Okatie																		
I Onderstepoort																		
I Oranienburg			8	17	21	4	21	11	20	7		11	2		6	25	15	1
I Oslo							2											1
I Othmarschen																		
I Ouakam																		
I Overschie				1					1									
I Panama			1	14	4		2	2	1	1		1			3	21	2	
I Paratyphi A				6	2			2	1	1		4	1			9		
I Paratyphi B			2		1		15			4		2					2	

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
I	Paratyphi B var. L(+) tartrate+	8		6	6	6		6	13			11			2	6	2	1
I	Paratyphi C																	
I	Pensacola				1					2		2						
I	Poano				1													
I	Pomona	1		4		1	2		1			1				1		
I	Poona	2	5	6			6	4	10	2		4	1			7	10	3
I	Portland																	
I	Potsdam			2	2										1	1		
I	Praha																	
I	Putten			3	2		1	1	3						1			
I	Quiniela		1															
I	Reading			1	2		6	4	5			4			1	6		
I	Redlands																	
I	Richmond															1		
I	Rissen	1		4				2	1			1	1			1		
I	Riverside																	
I	Roodepoort			1					1									
I	Rubislaw	2	42	2	4				3	20		16	1			2		
I	Saarbruecken															1		
I	Saintpaul	4	11	19	32	2	37	19	16	7		53			8	24	9	1
I	Sandiego		6	4	6		8	4	7			7			2	8	3	1
I	Schwarzengrund		4	14	9		7	6	4	5		16			1	12		1
I	Senftenberg	1	3	5	8	1	1	2	1	1		1				3		1
I	Shubra	1																
I	Singapore			1					1									
I	Skansen																	
I	Soahanina					1												
I	Soerenga																1	
I	Somone															1		
I	Stanley	2	2	7		2	4	6	13			5				16		1
I	Stanleyville				2													
I	Strathcona						1											
I	Suelldorf																	
I	Sundsvall																	
I	Szentes																	
I	Takoradi																	
I	Taksony															4		
I	Tallahassee											1				1		
I	Tamberma																	
I	Tarshyne																	
I	Teitelkebir	5		2		1	1		1							2		
I	Teltow																	

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
I	Tennessee		1													1		
I	Thompson	12	12	16	13	1	24	14	40	3		8	2	1	12	15		1
I	Tilene																	
I	Tornow															1		
I	Toucra																	
I	Travis																	
I	Typhi	1	1	17	40		8	4	9		2	3	1			23	3	3
I	Typhimurium	76	70	87	199	16	139	91	185	189		309	19	1	25	142	37	13
I	Uganda		11		2			3	1							3	2	1
I	Urbana	1	7	1			1		2			1				1		
I	Uzaramo																	
I	Veneziana																	
I	Virchow		1	1	4		4		2			1				3		
I	Wagenia																	
I	Wandsworth					1										1		
I	Wangata														1			
I	Weltevreden			3	1				1			1				1	1	
I	Westhampton																	1
I	Widemarsh				1													
I	Wien																	
I	Winston																	
I	Worthington						1	1	2	3		1				1		
I	Wyldegreen																	
II	21:g,[m],[s],t:-																	
II	21:z10:[z6]																	
II	30:l,z28:z6																	
II	43:z4,z23:-																	
II	48:a:z6																	
II	48:d:z6																	
II	50:b:z6																	
II	58:c:z6											1						
II	58:l,z13,z28:z6																	
II	6,7:-:1,6																	
II	6,7:z:e,n,x																	
II	9,12:z29:1,5																	
II	9,12:z39:1,7																	
IIIa	13,22:z4,z23:-																	
IIIa	13,23:g,z51:-																	
IIIa	17:z36:-																1	
IIIa	18:z4,z23:-																	1
IIIa	21:g,z51:-																	
IIIa	35:z29:-																	
IIIa	40:z4,z23:-											1						

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
IIIa	41:z4,z23:-			1			1	1				1						3
IIIa	42:g,z51:-																	
IIIa	44:z4,z23,z32:-																	
IIIa	44:z4,z23:-																	
IIIa	47:g,z51:-																	
IIIa	48:g,z51:-			3	1	1						3						
IIIa	48:z4,z23:-																	
IIIa	48:z4,z24:-				1													
IIIa	50:z4,z23:-																	
IIIa	51:z4,z23:-											1						
IIIa	53:z4,z23:-																	
IIIa	56:z4,z23:-																	
IIIa	59:z4,z23:-																1	
IIIb	16:z10:e,n,x,z15																	
IIIb	35:k:e,n,x,z15																	
IIIb	35:l,v:z35																	
IIIb	35:r:e,n,x,z15																	
IIIb	42:(k):z35																	
IIIb	47:k:-				2													
IIIb	47:k:z35								2									
IIIb	47:k:z53																	
IIIb	47:r:z53																	
IIIb	48:c:z																	
IIIb	48:i:z						1											
IIIb	48:z4,z24:-											1						
IIIb	50:k:-											1						
IIIb	50:k:z											2						
IIIb	50:r:z																	
IIIb	53:z10:z35																1	
IIIb	60:i:e,n,x,z15			1														
IIIb	60:k:z35								2									
IIIb	60:r:e,n,x,z15																	
IIIb	60:r:z																	
IIIb	61:-1,5,[7]																	
IIIb	61:c:z35																	
IIIb	61:i:z																	
IIIb	61:k:1,5,[7]																	
IIIb	61:l,v:-																	
IIIb	61:l,v:1,5,7			1													1	1
IIIb	61:l,v:z35								1									
IIIb	61:z52:z53																	
IIIb	65:(k):z																	
IIIb	65:z10:e,n,x,z15																	

Subspecies	Serotype	KY	LA	MA	MD	ME	MI	MN	MO	MS	MT	NC	ND	NE	NH	NJ	NM	NV
IV	11:z4,z23:-																	
IV	16:z4,z32:-			1														
IV	17:z29:-																	
IV	40:z4,z23:-																	
IV	40:z4,z24:-																	
IV	40:z4,z32:-									1		1						
IV	43:z4,z23:-											1						
IV	44:z36,[z38]:-								2									
IV	44:z4,z23:-					1			1									
IV	44:z4,z24:-								1			1						
IV	44:z4,z32:-								1			1						
IV	45:g,z51:-				1													
IV	48:g,z51:-			2														
IV	50:g,z51:-						1		1			3	1					
IV	50:z4,z23:-		1				3		1									
IV	6,7:z4,z23:-																	
IV	6,7:z4,z24:-																	
V	bongori ser. 48:z35:-																	
V	bongori ser. 48:z81:-																	
	Partially serotyped	36	2		12		2	13		1	147	3		16	2		2	1
	Rough, mucoid, and/or nonmotile isolates		1	9	33		1	1	5	2		7				9	1	1
	Unknown	1	1	36	31		2	1		7	2	7	4	123	4	1	38	
	Total	419	1065	909	1761	136	994	712	1136	1031	151	2026	101	145	202	1198	286	130

Appendix 2c. Culture-confirmed *Salmonella* infections reported to LEDS by serotype and reporting jurisdiction, 2014 (New York to Wyoming¹)

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
I	11:-:e,n,x																	
I	11:i:-																	
I	11:r:-																	
I	11:z10:-																	
I	13,22:b:-																	
I	13,23:-:1,5																	
I	13,23:b:-	2						97		1			4					
I	16:b:-																	
I	28:i:-																	
I	3,10:-:1,5					1									1			
I	3,10:-:l,w																	
I	3,10:e,h:-																	
I	3,10:l,v:-																	
I	3,10:r:-																	
I	38:k:-																	
I	4,[5],12:-:1,2		3												1			
I	4,[5],12:-:1,5																	
I	4,[5],12:-:1,7																	
I	4,[5],12:-:e,n,z15	2																
I	4,[5],12:b:-	19				5				5			10		9	3		
I	4,[5],12:d:-		1			2		1										
I	4,[5],12:e,h:-					1												
I	4,[5],12:i:-	192	67		23	90		33		69			76		61	97	4	4
I	4,[5],12:l,v:-																	
I	4,[5],12:r:-																	
I	40:-:e,n,x	1																
I	6,7:-:1,2												2					
I	6,7:-:1,5		5					2										
I	6,7:-:e,n,x																	
I	6,7:a:-																	
I	6,7:b:-																	
I	6,7:c:-												1					
I	6,7:d:-																	
I	6,7:e,h:-																	
I	6,7:k:-					1		6					1			1		
I	6,7:l,w:-												1					
I	6,7:r:-												3					
I	6,7:y:-												1					
I	6,7:z10:-																	
I	6,8:-:1,2	4																

¹ The key to state name abbreviations can be found at http://www.census.gov/geo/reference/ansi_statetables.html.

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
I 6,8:-:1,5																		
I 6,8:-:e,n,x																		
I 6,8:d:-																1		
I 6,8:e,h:-													1					
I 6,8:i:-																		
I 6,8:z10:-																		
I 9,12:-:1,5		2																
I 9,12:-:e,n,x																		
I 9,12:a:-																		
I 9,12:e,h:-																3		
I 9,12:g,z51:-			1															
I 9,12:i:-																		
I 9,12:l,v:-																	1	
I 9,12:l,z28:-								9										
I Abaetetuba																		
I Aberdeen																		
I Abony																1	2	
I Adelaide		8		7		2						2	3			2		
I Adeoyo																		
I Agama																		
I Agbeni		14	6			5										2		
I Ago																		
I Agona		32	10	1	5	11	4	4	3	4	11	1	2		6	7	1	
I Agoueve		1													1			
I Alabama				1						1								
I Alachua		1										1						
I Albany						2						1			3			
I Albert						1												
I Altona			1	1								1						
I Amager					1													
I Amsterdam																		
I Anatum		38	5	2	1	8	3	12		5	13	3			6	2	2	
I Anecho						1	2											
I Anfo																		
I Apapa			2															
I Apeyeme																		
I Arapahoe																		
I Arechavaleta								1										
I Bahrenfeld															1			
I Baildon		7	1			4		1	1	2			5			4	6	
I Bareilly		11	5	10	1	7	2	8	2	31		1	40		1	1	7	
I Barranquilla													1					
I Bassadji		1							1				1					
I Benin																		

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
I Berta		33	6	9		13	6	3	2	4	3		14		1	2	2	
I Birkenhead																		
I Bispebjerg																		
I Blijdorp																		
I Blockley		48	1			10							1					
I Bochum																		
I Bonariensis		2																
I Bonn																		
I Bournemouth																		
I Bouso		1																
I Bovismorbificans		7	2			1	2	3					1			5	1	1
I Braenderup		29	29	24	13	30	1	21	4	4	38	4	14		6	13	1	
I Brandenburg		7	2					3		2		2	6		2	1		
I Brazil																		
I Bredeney		4	1	1		1				2			1		2	1		
I Brunei																		
I Bukavu																		
I Buzu						2												
I Canada		1											1					
I Cannstatt																		
I Carmel						1												
I Carrau		1						7							1			
I Cerro			1		1	3	2		1	1						2		
I Chailey					1													
I Chester			2	3	1	1				1			3		2			
I Chiredzi																		
I Choleraesuis											3							
I Choleraesuis var. Kunzendorf		2																
I Clackamas					3										4			
I Coeln						1						1						
I Colindale																		
I Colorado																		
I Concord																		
I Corvallis		2				2				1								
I Cotham		5	2	2	4	3			2	1		1	1		2	3	2	
I Cubana			1			2												
I Cullingworth																		1
I Curacao		1																
I Daytona													2		2			
I Denver																		
I Derby		13	2			3		4		1	3	3	3		1	2	1	
I Djakarta																		

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
I Dublin		9	4	1	1	2	4	1	5	2		3	3		8	5	1	
I Duisburg																		
I Durban		1	3		3								2				1	
I Durham		2																
I Ealing						1		1				2	3		1			
I Eastbourne		1															1	
I Ebrie				1														
I Edinburg												1						
I Elisabethville																		
I Emek																		
I Enteritidis		668	320	82	102	421	47	146	42	149	222	98	195	52	196	256	29	3
I Eppendorf									2									
I Essen									1									
I Farmsen															1			
I Florida													1					
I Fluntern						1	2											
I Freetown																		
I Fresno			1															
I Galiema		1																
I Gaminara		7				1		14		2		1	1		2			
I Gatuni		1													1			
I Georgia								1										
I Give		2		1				4			5		1			1		
I Glostrup													1					
I Goettingen		2																
I Goldcoast																		
I Good																		
I Grumpensis						2												
I Guinea						1												
I Hadar		25	5		4	6		2	3		2	8	4		7	3		1
I Haelsingborg		1																
I Haifa		1																
I Hartford		16	14			3	2	7		6			4			2	2	
I Hato																		
I Havana		6			1	3		1					2		4			
I Heidelberg		180	31	38	21	26	3	7	2	17	81	32	14		28	10	3	
I Herston																		
I Hillingdon																		
I Hindmarsh																		
I Holcomb		9	1			5							1				1	
I Horsham																		
I Hull																		
I Hvittingfoss		8	2	1		7				1						4		

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
I Idikan																1		
I Indiana		12											1					
I Infantis		123	42	26	6	66	5	11	6	33	105	24	39	1	17	24	18	
I Inverness		1				1		8		1			2					
I Irumu															1			
I Isangi		3																
I Ituri								1										
I Jangwani																		
I Javiana		77	35	15	5	85	2	271	5	111	122	6	88		5	12		
I Jodhpur																		
I Johannesburg		2				2												
I Kaapstad																		
I Kedougou																		
I Kentucky		10			3	8	4			4		1	2		2	3		
I Kiambu		3	2	11		1				1			2			1		
I Kimberley												1						
I Kingabwa																		
I Kingston			1															
I Kintambo					1													
I Kisangani						4												
I Kisarawe																		
I Kisii																		
I Kitenge																		
I Koketime																		
I Kokomlele			1															
I Kottbus		1																
I Krefeld																		
I Kua																		
I Kuntair																		
I Lagos																		
I Landwasser																		
I Larochelle															1			
I Lattenkamp																		
I Lexington			1															
I Limete										1								
I Litchfield		17	3	16	2	10	3	1	2	1			21		3	4	1	
I Liverpool										1								
I Livingstone		2			1											1		
I Lomalinda		1			1	1						1	3					
I Lome													1					1
I Lomita																		
I London		4				4	2	3					4			2		
I Luciana																		

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
I	Maastricht					1												
I	Madelia	2						1										
I	Manhattan	3		2	1	3		2					1			3		
I	Maricopa																	
I	Marshall																	
I	Matadi		1															
I	Matopeni																	
I	Maumee																	
I	Mbandaka	18	4	2	4	3	4	1		6	5	2	1		7	2	1	
I	Meleagridis	1														1		
I	Menston	2																
I	Miami	29	5		3	1		11		1		1	3			4	2	
I	Michigan	2													1			
I	Mikawasima	1																
I	Minnesota	1														1		
I	Mississippi	6	10	5		8		9		32	30	1	2					
I	Molade														1			
I	Monschau	2	3			2				2			2		3			
I	Montevideo	28	19	16	4	19	4	22	3	9	44	9	6		18	10	5	
I	Mountpleasant																	
I	Muenchen	51	14	10	5	24	2	44	1	17	21	7	12		16	12	1	1
I	Muenster	1	3		1	2							3			4		
I	Napoli		1															
I	Neukoelln												1					
I	Newmexico		1													1		
I	Newport	234	59	132	18	161	13	242	10	116	206	20	169	1	22	83	26	
I	Nima												1					
I	Norwich	8	1	13		6	4			12	1		2					
I	Nottingham																	
I	Nyanza																	
I	Oakland																	
I	Ohio		3			1		1		1	2					3		
I	Okatie	1																
I	Onderstepoort																	
I	Oranienburg	56	27	9	11	21	7	8		9	41	8	14		18	18	3	
I	Oslo	1	1		2							1	2			2		
I	Othmarschen																	2
I	Ouakam				1													
I	Overschie																	
I	Panama	28	1			5	4		1	1		1	11		5	6		
I	Paratyphi A	20	6	1		2	1	2			6		1		6			
I	Paratyphi B	1					8			3		1	3		1		4	

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
I	Paratyphi B var. L(+) tartrate+	14	40	39	6	21		5			21	1	2		6			
I	Paratyphi C																	
I	Pensacola	2						5					4					
I	Poano																	
I	Pomona	6	2	1		4		1					1		1	1		
I	Poona	13	4	4	2	8	1	12		1	25	11	4		7	8		1
I	Portland														2			
I	Potsdam	16		2					1				2		1			
I	Praha	2																
I	Putten	1	1						1	1			1					
I	Quiniela																	
I	Reading	13	1	1	1	7		2	5			3	2			4		
I	Redlands									1								
I	Richmond	2				2												
I	Rissen	2	1		2								1		1	1		
I	Riverside																	
I	Roodepoort																	
I	Rubislaw	1	2	11				9							1			
I	Saarbruecken																	
I	Saintpaul	66	28	9	10	44	11	60	8	26	47	12	38		21	16	5	
I	Sandiego	12	4	1		13	2	2				2	5		3			
I	Schwarzengrund	31	2	2		15	2	10		2			5		3	8		
I	Senftenberg	7	1		3	4		1		3	3	4	2		2	1	1	
I	Shubra																	
I	Singapore	1						3										
I	Skansen		1															
I	Soahanina																	
I	Soerenga	1					2						1					
I	Somone																	
I	Stanley	13	4		1	10	2	1		3	6	1	4		8	2	1	
I	Stanleyville	2	1			1				1								
I	Strathcona																	
I	Suelldorf																1	
I	Sundsvall																	
I	Szentes					1												
I	Takoradi											1						
I	Taksony																	
I	Tallahassee	1																
I	Tamberma																	
I	Tarshyne		1															
I	Teitelkebir	1			1	1										2		
I	Teltow	1																

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
I	Tennessee	3	1			1				1		1	1			1		
I	Thompson	103	16	9	18	32	6	7		12	19	5	27		19	9	2	
I	Tilene																	
I	Tornow																	
I	Toucra																	
I	Travis																	
I	Typhi	61		1	3	16				2	1	3	11		14	112		
I	Typhimurium	358	164	64	61	187	32	121	66	136	167	51	209	1	56		25	2
I	Uganda	12	4	15		4	4			2					2	2		
I	Urbana		3									2			1	1		
I	Uzaramo		1										1					
I	Veneziana																	
I	Virchow	7	2			2				2		2	2		1	1		
I	Wagenia																	
I	Wandsworth	2																
I	Wangata	1											1					
I	Weltevreden	5	1		5	3	2					2	2					
I	Westhampton	1															2	
I	Widemarsh	2				1				1								
I	Wien																	
I	Winston												1					
I	Worthington	1						1					1		1			
I	Wyldegreen																	
II	21:g,[m],[s],t:-											1						
II	21:z10:[z6]																	
II	30:l,z28:z6	1																
II	43:z4,z23:-															1		
II	48:a:z6																	
II	48:d:z6				1													
II	50:b:z6																	
II	58:c:z6																	
II	58:l,z13,z28:z6																	
II	6,7:-:1,6																	
II	6,7:z:e,n,x																	
II	9,12:z29:1,5								1									
II	9,12:z39:1,7																	
IIIa	13,22:z4,z23:-																	
IIIa	13,23:g,z51:-							2										
IIIa	17:z36:-																	
IIIa	18:z4,z23:-																	
IIIa	21:g,z51:-																	
IIIa	35:z29:-																	
IIIa	40:z4,z23:-				1													

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
IIIa	41:z4,z23:-	1			1	1				1								
IIIa	42:g,z51:-																	
IIIa	44:z4,z23,z32:-																	
IIIa	44:z4,z23:-																	
IIIa	47:g,z51:-																	
IIIa	48:g,z51:-							4					5					
IIIa	48:z4,z23:-																	
IIIa	48:z4,z24:-												1					
IIIa	50:z4,z23:-																	
IIIa	51:z4,z23:-												1					
IIIa	53:z4,z23:-																	
IIIa	56:z4,z23:-																	
IIIa	59:z4,z23:-																	
IIIb	16:z10:e,n,x,z15												1					
IIIb	35:k:e,n,x,z15														1			
IIIb	35:l,v:z35					1												
IIIb	35:r:e,n,x,z15																	
IIIb	42:(k):z35																	
IIIb	47:k:-																	
IIIb	47:k:z35																	
IIIb	47:k:z53																	
IIIb	47:r:z53							1										
IIIb	48:c:z																	
IIIb	48:i:z		1									1	1					
IIIb	48:z4,z24:-																	
IIIb	50:k:-	1																
IIIb	50:k:z	2				1									1			
IIIb	50:r:z											3						
IIIb	53:z10:z35											1						
IIIb	60:i:e,n,x,z15																	
IIIb	60:k:z35																	
IIIb	60:r:e,n,x,z15	2													1			
IIIb	60:r:z												5					
IIIb	61:-1,5,[7]												1					
IIIb	61:c:z35														2			
IIIb	61:i:z																	
IIIb	61:k:1,5,[7]																	
IIIb	61:l,v:-							1										
IIIb	61:l,v:1,5,7												1		1			
IIIb	61:l,v:z35																	
IIIb	61:z52:z53									1								
IIIb	65:(k):z												1					
IIIb	65:z10:e,n,x,z15																	

Subspecies	Serotype	NY	OH	OK	OR	PA	RI	SC	SD	TN	TX	UT	VA	VT	WA	WI	WV	WY
IV	11:z4,z23:-	1																
IV	16:z4,z32:-	2																
IV	17:z29:-		1															
IV	40:z4,z23:-					3												
IV	40:z4,z24:-	2																
IV	40:z4,z32:-																	
IV	43:z4,z23:-																	
IV	44:z36,[z38]:-									1			2					
IV	44:z4,z23:-	3	1							2								
IV	44:z4,z24:-															2		
IV	44:z4,z32:-	1																
IV	45:g,z51:-	1																
IV	48:g,z51:-	1				1						1	1		3			
IV	50:g,z51:-	4	1		1	1						2	2		1			
IV	50:z4,z23:-		1												1			
IV	6,7:z4,z23:-									1								
IV	6,7:z4,z24:-	3										1						
V	bongori ser. 48:z35:-																	
V	bongori ser. 48:z81:-									1								
	Partially serotyped	1	4	106		12	14	1	6	1	239			64		9	1	10
	Rough, mucoid, and/or nonmotile isolates	10	2		1	3		13		1			10			12		
	Unknown	27	36				13	1		5	2062	1	52	1	3	37	17	14
	Total	3010	1113	708	373	1534	234	1300	187	882	3554	362	1240	120	652	863	187	37

Appendix 3a. Culture-confirmed *Salmonella* infections reported to LEDS by serotype and year, 2004–2014

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	11:-:e,n,x								2			1	3
I	11:e,h:-	1											1
I	11:i:-											1	1
I	11:r:-						1	1	2	1	3	2	10
I	11:z10:-			1						1		1	3
I	13,22:-:1,6		1		1					2			4
I	13,22:b:-								2			1	3
I	13,22:z:-			1			2	2	4		1		10
I	13,23:-:1,5	1			2	1	2	5	8	3	3	2	27
I	13,23:b:-	3	8	4	51	131	113	234	218	252	216	248	1478
I	13,23:z:-								1	2			3
I	16:-:e,n,x							1					1
I	16:a:-							1					1
I	16:b:-							1	2	2		1	6
I	16:d:-					1	1	1		3			6
I	16:e,h:-						2			1			3
I	16:l,v:-		2		2				2	1			7
I	17:-:e,n,x								1				1
I	28:i:-			1				1		3		1	6
I	3,10:-:1,2									1			1
I	3,10:-:1,5								6	11	7	3	27
I	3,10:-:1,6				1	1				3			5
I	3,10:-:l,w								1		1	2	4
I	3,10:e,h:-			2				1		5	1	8	17
I	3,10:i:-							1					1
I	3,10:l,v:-			2	2		1	4	1	2	3	4	19
I	3,10:l,z13:-							1		1	1		3
I	3,10:r:-			3								2	5
I	3,26:l,z13:1,5										1		1
I	30:b:-									2	1		3
I	38:k:-	1				2	1	4	2	1	2	1	14
I	4,[5],12:-:1,2	3	1	15	2	10	9	12	12	44	15	28	151
I	4,[5],12:-:1,5							1	2			1	4
I	4,[5],12:-:1,7				1			1		1	1	1	5
I	4,[5],12:-:e,n,z15								1			3	4
I	4,[5],12:b:-	53	84	105	180	200	215	266	245	265	198	203	2014
I	4,[5],12:d:-			3	4	12	5	10	5	8	9	16	72
I	4,[5],12:e,h:-		2	4	5	4	2	1	11	18	10	19	76
I	4,[5],12:i:-	744	879	1222	1225	940	991	1181	1338	1954	2205	2189	14868
I	4,[5],12:l,v:-		1								2	3	6
I	4,[5],12:r:-	17	2	1		18	17	21	8	7	10	10	111
I	4,12,27:d:-							1					1
I	4,12,27:l,v:-							1					1

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	40:-:e,n,x									1		2	3
I	40:l,z28:-										1		1
I	43:k:-			3									3
I	47:b:-						1						1
I	47:d:-								1	1			2
I	47:z4,z23:-	1		13	2	3	3	8	3	2			35
I	6,14:-:l,z13,z28			1									1
I	6,14:b:-			1	1	1							3
I	6,14:d:-							1					1
I	6,14:y:-								1				1
I	6,7,[14]:r:-										1		1
I	6,7:-:1,2						2				4	4	10
I	6,7:-:1,5	16	23	15	23	27	26	35	43	68	58	71	405
I	6,7:-:1,6						1	1	3	5			10
I	6,7:-:1,7							1		1			2
I	6,7:-:e,n,x						1	2	3	1		1	8
I	6,7:-:e,n,z15						2	2	3	2	3		12
I	6,7:a:-											2	2
I	6,7:b:-	1	1					2			1	4	9
I	6,7:c:-			1	2	1	1		1	4	6	2	18
I	6,7:d:-							3		2	2	3	10
I	6,7:e,h:-			1	1	2	4	13	11	30	16	6	84
I	6,7:i:-			1							1		2
I	6,7:k:-	3	3	17	6	7	18	19	25	20	19	34	171
I	6,7:l,w:-			1		3	1	2	5	1		4	17
I	6,7:r:-	1	1	2	1	7	2	9	13	27	9	23	95
I	6,7:y:-					3		4	2	11	3	11	34
I	6,7:z10:-								3	2	1	1	7
I	6,8:-:1,2		2	1	2	4	3	3	8	21	7	7	58
I	6,8:-:1,5		1		2			2		2	4	2	13
I	6,8:-:e,n,x								1		1	1	3
I	6,8:-:e,n,z15						1				1		2
I	6,8:b:-		1					1	1	1			4
I	6,8:d:-			1	8	5	8	9	8	14	16	7	76
I	6,8:e,h:-	3		1	3	6	7	9	15	13	14	41	112
I	6,8:i:-					1					2	3	6
I	6,8:l,v:-					1		1	1	1	2		6
I	6,8:r:-							1	1		1		3
I	6,8:y:-										1		1
I	6,8:z10:-					2			1	1	3	2	9
I	6,8:z4,z23:-										1		1
I	8,20:-:z6									1			1
I	8,20:i:-				1			1	1	1	2		6
I	9,12:-:1,2						1			1			2

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	9,12:-:1,5	1		3	4	6	9	12	13	20	19	44	131
I	9,12:-:1,6									1			1
I	9,12:-:e,n,x							1				1	2
I	9,12:a:-					3		1	3		6	6	19
I	9,12:e,h:-							1		5	3	3	12
I	9,12:g,z51:-			1				3		4	3	1	12
I	9,12:i:-											4	4
I	9,12:l,v:-			2	1	6		1	4	2	2	3	21
I	9,12:l,z28:-	1	6	9	13	17	33	29	21	57	40	47	273
I	Aarhus	2	4	6	6	5	4	2					29
I	Aba			1		1			1				3
I	Abaetetuba	1		3	3	1	5	3		3	2	1	22
I	Aberdeen	6	6	10	13	6	13	7	6	6	7	4	84
I	Abony	10	2	8	3	2	3	6	4	4	7	12	61
I	Abortusequi							1	2	1			4
I	Adelaide	75	70	66	58	63	43	79	95	64	132	176	921
I	Adeoyo											1	1
I	Adjame										1		1
I	Aequatoria	5	2										7
I	Africana	1											1
I	Afula	1											1
I	Agama	2	8	4	2		7	2	2	1	2	2	32
I	Agbeni	70	15	14	15	16	15	23	39	58	54	59	378
I	Ago			1	4	4	14	7	3	5	5	1	44
I	Agona	403	364	530	505	601	380	508	504	339	345	307	4786
I	Agoueve	2	3	3	2	1	3	4	7	4	3	3	35
I	Ahoutoue				1								1
I	Ahuza						1						1
I	Ajiobo	1		1				1					3
I	Alabama	3	3	5				2	4	3	9	3	32
I	Alachua	27	19	17	19	13	24	18	14	16	11	11	189
I	Alagbon	1	3			1							5
I	Albany	43	39	36	38	23	30	29	30	21	27	21	337
I	Albert		1				3	1	3	5	5	2	20
I	Albuquerque								1	1			2
I	Allandale	1					2			1			4
I	Allerton	1											1
I	Altona	2	1	4	6	6	10	14	77	15	10	14	159
I	Amager	18	5	4	4	9	5	8	2	5	3	1	64
I	Amherstiana			1									1
I	Amounderness					1							1
I	Amoutive			1	2	2	2	1					8
I	Amsterdam	4	4	4	2	2	7	4	7	3	1	1	39
I	Amunigun									1			1

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Anatum	258	201	247	204	219	227	227	293	402	238	282	2798
I	Anecho		2	3	9	9		2		4	4	5	38
I	Anfo		1	1	2	2	1	1	2	2	1	2	15
I	Antsalova	1											1
I	Apapa	12	7	6	13	8	5	5	3	4	5	7	75
I	Apeyeme	1	2				2	1			3	1	10
I	Aqua	2	2	3	1	1	4	3	7	7	9		39
I	Arapahoe									1		1	2
I	Arechavaleta	14	4	2	12	9	14	12	8	8	4	5	92
I	Assen		1			1			2	1			5
I	Assinie			4									4
I	Atento									1			1
I	Ati	1											1
I	Augustenborg		1			1	1		1	1			5
I	Avignon			1									1
I	Avonmouth								1				1
I	Ayinde							1					1
I	Azteca					1							1
I	Babelsberg	2							1				3
I	Bahrenfeld			1				1		2	1	1	6
I	Baildon	7	31	14	15	9	11	88	26	25	35	70	331
I	Ball				1			3	1				5
I	Banana		2	1					2	1			6
I	Bandia	1											1
I	Bareilly	231	196	253	237	222	282	339	429	890	353	381	3813
I	Barranquilla	3	1	5	5	26	2	4	11	13	2	1	73
I	Bassadji	1								1		5	7
I	Beaudesert			3	2	3	3	5	1	1	1		19
I	Belem	1						1		3	2		7
I	Benin		1	5		1		1	4	3	1	1	17
I	Bere		2	7	6	11	3	2	1	1	1		34
I	Bergen			1					1				2
I	Berkeley									1			1
I	Berta	408	207	249	188	186	182	263	321	299	254	318	2875
I	Bietri					1							1
I	Bijlmer		2										2
I	Binningen	1											1
I	Birkenhead	5	2		1	3	4	3		1	2	1	22
I	Bispebjerg											2	2
I	Blegdam	7	4			1	1	2	1				16
I	Blijdorp										1	1	2
I	Blockley	110	53	66	70	54	56	37	28	49	41	100	664
I	Bobo		1										1
I	Bochum											1	1

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Bolombo								1				1
I	Bonariensis	3	1	2	4	5	2	1	6	12	5	5	46
I	Bonn	2		1			1					1	5
I	Bournemouth	1	1	1	2	1	1	1				1	9
I	Bouso		3	1				2				1	7
I	Bovismorbificans	109	72	68	47	73	61	67	110	96	48	70	821
I	Bradford	1		1	1		1	1					5
I	Braenderup	678	601	550	551	655	715	728	733	829	653	610	7303
I	Brancaster									1			1
I	Brandenburg	80	128	92	70	78	87	63	67	74	83	72	894
I	Brazil	2	2	3	2	4	1	1	1		2	1	19
I	Brazos							1					1
I	Brazzaville		2	3	1	1	1		1				9
I	Bredeney	27	26	26	22	28	24	37	29	67	29	42	357
I	Breukelen				1								1
I	Brezany		1			1							2
I	Brijbhumi									1			1
I	Bron	3		1		1							5
I	Bronx				1					1			2
I	Bruck						1	1					2
I	Brunei	3	2			1		1	2	1		1	11
I	Bsilla	3	1			1							5
I	Budapest				1								1
I	Bukavu				1	1			1	3		2	8
I	Bukuru	1											1
I	Burgas				1								1
I	Burundi					1							1
I	Butantan		1				1						2
I	Buzu			2	2			1		5	2	2	14
I	California	1		2		1	1			1			6
I	Canada	1	1							1	2	2	7
I	Cannstatt			1		2	9	3	6	1	2	2	26
I	Caracas			1		1			2		3		7
I	Carmel	9	4	1	4	2	2	4	1	5	4	6	42
I	Carrau	8	9	10	1	7	64	31	20	33	16	17	216
I	Cerro	21	26	35	31	48	26	29	18	43	34	26	337
I	Chailey	3	2			2	3	11	7	9	30	17	84
I	Chandans	1	5	1		1	1	1	1		1		12
I	Charity						1	1		1			3
I	Chester	15	15	26	30	26	41	85	63	50	26	48	425
I	Chicago			1	2			1					4
I	Chichiri							4		4			8
I	Chile					1							1
I	Chincol		2	1				2	1	1			7

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Chingola				1								1
I	Chiredzi											1	1
I	Chittagong		7										7
I	Choleraesuis	16	7	11	14	18	22	8	13	12	7	3	131
I	Choleraesuis var. Decatur	1					2				1		4
I	Choleraesuis var. Kunzendorf	9	6	10	10	4	9	4	3	5	5	2	67
I	Clackamas	1	1	1	2	5		5	6	2	1	7	31
I	Claibornei	1		1									2
I	Cleveland	1					1				1		3
I	Coeln	3	2	4	4	6		4	2	5	2	7	39
I	Colindale	3	4	12	5	6	7	4	5	5	3	1	55
I	Colorado											1	1
I	Concord	4	6	17	20	31	36	17	7	8	5	2	153
I	Corvallis	4	13	23	22	30	13	23	19	27	11	21	206
I	Cotham	5	9	12	14	21	20	23	25	45	62	65	301
I	Cremieu		1										1
I	Croft			1									1
I	Cubana	18	13	16	24	9	18	33	15	30	8	11	195
I	Cuckmere	1		1							1		3
I	Cullingworth		6			1						1	8
I	Curacao		1					1				2	4
I	Cyprus								1				1
I	Daarle	1	1			1							3
I	Dahlem			1									1
I	Dahra		2	2	1		1	1	1		2		10
I	Dakar				1								1
I	Damman	1											1
I	Daytona	10	5	5	1	3	2	7	10	7	7	6	63
I	Denver	1	5	1	2	6	3	3	5		3	3	32
I	Derby	136	121	139	143	140	131	132	113	110	80	104	1349
I	Detmold										1		1
I	Diguel		1										1
I	Diourbel		1										1
I	Djakarta			1						1		1	3
I	Djugu	2	1	2	2	2				1			10
I	Doorn			1									1
I	Doulassame		1										1
I	Dublin	73	55	81	104	106	100	124	100	113	132	169	1157
I	Duisburg			1	2	5	3	3	4	1	7	2	28
I	Durban	15	6	11	12	7	17	6	5	9	12	13	113
I	Durham	3	8	4	1	3	4	4	3	5	1	2	38
I	Duval	1		1			1						3
I	Ealing	13	26	12	28	25	33	26	24	17	20	23	247

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Eastbourne	8	29	16	16	27	15	13	19	25	15	12	195
I	Eboko						1						1
I	Ebrie					1	1			2		1	5
I	Edinburg	25	20	17	6	7	10	3	1			1	90
I	Edmonton		1										1
I	Ekotedo									1			1
I	Ekpoui						1						1
I	Elisabethville	1			1				1			1	4
I	Elomrane	3			1								4
I	Emek	6	3	3	7		3					1	23
I	Emmastad						1						1
I	Entebbe	1		3	6								10
I	Enteritidis	4993	6705	6701	6056	7197	7122	8896	7546	7095	6631	8895	77837
I	Enugu					1	1						2
I	Eppendorf	1		2	1	5			1		1	2	13
I	Erfurt										1		1
I	Escanaba				1								1
I	Eschberg								1				1
I	Eschweiler		1										1
I	Essen	2	1	1	5	1		2		1		2	15
I	Falkensee		4		1		1	1					7
I	Fann		1								1		2
I	Farmsen	1	1								1	1	4
I	Farsta	1		1									2
I	Fayed		1	1									2
I	Fillmore					1							1
I	Fischerkietz			1									1
I	Fischerstrasse				3	1	3			1			8
I	Fitzroy	1											1
I	Florida	1	6	3	6	1	7	5	3	3	3	7	45
I	Fluntern	7	3	3	5	6	7	8	8	4	8	11	70
I	Fomeco		1										1
I	Frankfurt						1		1				2
I	Freefalls						1						1
I	Freetown	2	11			1	2		1		1	1	19
I	Fresno				1	4	4		1	1	4	1	16
I	Friedenau			1						1			2
I	Friedrichsfelde	1		1	1	1		1		1			6
I	Frintrop			1					1				2
I	Fulica		1										1
I	Fyris		1	2									3
I	Galiema	1					1		1		2	1	6
I	Gambia		1							1			2
I	Gaminara	131	98	76	74	84	60	62	100	95	75	101	956

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Garba								1	1			2
I	Garoli			1									1
I	Gatow		2		2		2	1					7
I	Gatuni	2	1	2	3	3	2	2	4		1	3	23
I	Georgia	2	1	6	5	2		1	1	1		2	21
I	Gera										2		2
I	Give	105	101	122	106	117	109	103	120	150	100	101	1234
I	Giza									1			1
I	Glasgow				2					1			3
I	Glidji										1		1
I	Glostrup	2	10	5	5	5	3	2	5	4		2	43
I	Gnesta	1			2	2							5
I	Godesberg										1		1
I	Goettingen	2			3	3	1	2	2	2	1	2	18
I	Goldcoast	1	2		1			4	1	1		2	12
I	Gombe	1				1							2
I	Good											1	1
I	Gouloumbo						1						1
I	Goverdhan				1					1			2
I	Grandhaven			1									1
I	Grumpensis		102	8	2	1	3	1	2			3	122
I	Guildford				1		2			1			4
I	Guinea	1	3	1	3	2	1		2	2	4	7	26
I	Gwale			1									1
I	Hadar	336	211	281	286	310	271	224	204	242	174	180	2719
I	Haduna							1		1			2
I	Haelsingborg											1	1
I	Haifa	5	5	5	5	5	6	4	7	6		3	51
I	Hannover	1								2			3
I	Harburg			1									1
I	Harcourt			1									1
I	Hartford	190	235	195	192	209	184	250	241	252	153	151	2252
I	Hatfield							1					1
I	Hato	2		4	2	4	1	1	1		1	2	18
I	Havana	30	26	36	33	54	58	41	29	28	26	45	406
I	Heidelberg	1748	1887	1483	1576	1278	1409	1092	1102	976	1356	1430	15337
I	Herston	2	2	2	1	2	3	3	2	4	4	2	27
I	Herzliya									1			1
I	Hidalgo	1					1	1					3
I	Hiduddify			1					1				2
I	Hillegersberg			1		1							2
I	Hillingdon		1					2				1	4
I	Hindmarsh	11	5	4		2	3					1	26
I	Hofit		1	2		1	1						5

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Hoghton	1		1									2
I	Holcomb		2	2	4	5	3	3	3	3	8	19	52
I	Homosassa					1							1
I	Horsham			1						1	1	1	4
I	Huettwilen									1			1
I	Hull		3	3	5	8	1		1	2	1	2	26
I	Hvittingfoss	34	35	45	54	46	51	119	72	63	61	55	635
I	Ibadan	5	9	3	2	3		4		1			27
I	Idikan		1		2	3			3	2		5	16
I	Ikeja							1					1
I	Ilala	1				1	1						3
I	Indiana	17	17	27	10	15	3	6	8	3	5	23	134
I	Infantis	582	503	482	517	633	626	807	901	1106	1236	1357	8750
I	Inganda	1		1	2		2	2			1		9
I	Inverness	48	43	48	56	47	55	50	63	88	54	41	593
I	IPensacola					1							1
I	Irumu	13	9	9	5	10	8	3	2	7	1	3	70
I	Isangi	3	4	1	4	5	1	1	1	3	5	9	37
I	Israel	1		1	4			1					7
I	Itami	7	10	1	1		1		1	1			22
I	Ituri	1	1	1	1	2	1	5			1	2	15
I	Jaffna				1								1
I	Jamaica									3			3
I	Jangwani	4	4		8	2	5		2		3	1	29
I	Javiana	1766	1309	1414	1259	2131	1992	3007	2931	2855	2260	2704	23628
I	Jedburgh		1										1
I	Jericho		1										1
I	Jerusalem			1									1
I	Joal	3			1								4
I	Jodhpur	1				1						1	3
I	Johannesburg	38	44	22	38	29	49	40	67	50	40	35	452
I	Jos		2										2
I	Jubilee	1		1									2
I	Jukestown			1						2	2		5
I	Kaapstad	1						1		1		2	5
I	Kaduna		1								3		4
I	Kalamu			1			2						3
I	Kalina		1										1
I	Kallo			1									1
I	Kampala						1				1		2
I	Kanifing						1						1
I	Kapemba	1		1									2
I	Kedougou	3	4	4	1	2	2			2	9	1	28
I	Kentucky	54	81	122	95	93	73	94	101	113	87	93	1006

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Kiambu	30	52	64	34	81	89	69	90	39	58	49	655
I	Kibi								2				2
I	Kimberley		1									1	2
I	Kimuenza				1								1
I	Kingabwa	7	11	4	7	6	6	4		6	5	1	57
I	Kingston	1	1		2	4	1	2	1		1	2	15
I	Kintambo	14	5	15	8	13	10	5	10	11	10	3	104
I	Kirkee			2									2
I	Kisangani		2	1		1	1	1	2	1		4	13
I	Kisarawe	1	1		3	1	2	2	3	2	1	3	19
I	Kisii				1							1	2
I	Kitenge											1	1
I	Kivu			1					2				3
I	Koketime					3					1	1	5
I	Kokomlele	2	1	2	3	2	2	4	6			3	25
I	Korlebu			1									1
I	Kortrijk			1									1
I	Kottbus	8	8	15	12	18	5	9	13	5	7	8	108
I	Kotu	1	4										5
I	Krefeld					2	2			1		1	6
I	Kua	2			1	3	1	1	1	2	2	1	14
I	Kumasi					2		1					3
I	Kunduchi					1							1
I	Kuntair											1	1
I	Kuru							1					1
I	Labadi					1							1
I	Lagos	2		1	3	1	1	3	4	2		3	20
I	Landwasser					2						1	3
I	Lansing	2			1		3						6
I	Larochelle	6	2	2	3	4	2	2	1	2	5	3	32
I	Lattenkamp		1		1	3	3	1	3	1	2	1	16
I	Lawndale									1			1
I	Lawra							1			2		3
I	Leiden										1		1
I	Lerum									1			1
I	Lexington	4	1	2	4	1	2	6	3	1		1	25
I	Lille	1			1					3	2		7
I	Limete		1	1		3						2	7
I	Lindenburg	2	4	3	2	3	1	1	2	1			19
I	Litchfield	160	140	205	237	341	263	199	230	212	204	175	2366
I	Liverpool	3	4	2	3	5	14	12	8	8	12	14	85
I	Livingstone	3	7	8	9	7	18	20	15	12	20	7	126
I	Loanda	2	2	2	3		1						10
I	Lockleaze		1	1	1			1					4

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Lomalinda	15	18	20	11	15	17	31	21	30	39	40	257
I	Lome					1	1	1		3	3	2	11
I	Lomita	4			1	4	1	1	1			1	13
I	London	27	29	34	175	25	20	31	27	34	25	40	467
I	Loubomo								1				1
I	Louisiana										1		1
I	Luciana	4	4	3	8	5	5	3	4	7	4	2	49
I	Luke								1	1	1		3
I	Maastricht											2	2
I	Macallen				1								1
I	Macclesfield									1			1
I	Madelia	6	6	11	10	9	20				2	3	67
I	Madison					1							1
I	Madras		1								1		2
I	Magwa									1			1
I	Malika		1										1
I	Malstatt		2										2
I	Manchester					1							1
I	Mango									1			1
I	Manhattan	79	57	76	53	106	78	92	82	83	67	78	851
I	Mara		1										1
I	Maricopa					3		1				1	5
I	Marshall											1	1
I	Matadi	2	2		2	2		2	1	1	1	2	15
I	Matopeni			3	1	1		1		3	1	3	13
I	Maumee	1			1		4					1	7
I	Mbandaka	163	187	238	228	225	214	249	187	176	214	202	2283
I	Meleagridis	8	12	20	27	9	16	13	16	20	13	10	164
I	Memphis	2		1						1	1		5
I	Menden			1				1					2
I	Mendoza	8	2										10
I	Menston			1	1	1			2	2		2	9
I	Mgulani			2	1		1		2	1			7
I	Miami	103	82	62	94	89	109	152	105	89	125	142	1152
I	Michigan	6	1	4	7	3	6	5	2	2	4	5	45
I	Mikawasima	1	1	6	2	1	1	1	1	4	1	1	20
I	Mim	1											1
I	Minnesota	34	55	57	31	21	26	18	22	25	18	28	335
I	Mississippi	557	563	604	449	432	443	471	546	648	509	532	5754
I	Mkamba	1											1
I	Molade		2	3	2	2	2	2	1	1	1	1	17
I	Mons					1							1
I	Monschaui	21	14	10	11	13	21	23	15	15	44	31	218
I	Montaigu								1				1

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Montevideo	870	805	1057	957	1087	1259	1062	1194	1200	853	841	11185
I	Montreal		1						1				2
I	Morehead					2							2
I	Mornington			1									1
I	Morotai	1											1
I	Moscow			1									1
I	Mountpleasant		1		1	1					1	1	5
I	Mpouto						1						1
I	Muenchen	747	738	757	952	878	818	829	976	1036	911	873	9515
I	Muenster	61	94	95	71	71	48	44	49	52	82	34	701
I	Mundonobo		1										1
I	Nagoya		2	2									4
I	Napoli	1	6	3	1	1	2	2	6	5	4	9	40
I	Narashino		1						1				2
I	Nchanga			1	1					23	1		26
I	Nessziona	1	1	3	1				1				7
I	Neudorf			1	1								2
I	Neukoelln	1								1		1	3
I	Newholland		2					1		1			4
I	Newmexico	3	3	2	1	8	5	4		3	3	4	36
I	Newport	3345	3315	3374	3554	3828	3815	5046	5185	5077	3602	4437	44578
I	Newrochelle									1			1
I	Newyork				1						2		3
I	Nigeria	2			1	1	3				1		8
I	Nima	5	8	15	8	10	5	4	7	9	12	5	88
I	Nitra				1		1		1				3
I	Norwich	106	91	117	113	135	119	154	195	183	130	158	1501
I	Nottingham	1	4	2	4	3	2	2	2	1	4	1	26
I	Nyanza	1			1		1	1				1	5
I	Oakland				1		1	2		1		2	7
I	Obogu							3	1				4
I	Offa		1	1	2	2	4	3			2		15
I	Ohio	74	88	68	49	38	56	61	64	45	59	57	659
I	Ohlstedt	1											1
I	Okatie			2						4	1	2	9
I	Oldenburg				1								1
I	Onderstepoort			1								1	2
I	Onireke						2	1	1				4
I	Ontario								1				1
I	Oranienburg	490	589	724	676	654	893	661	718	736	648	728	7517
I	Orientalis	2				3	1						6
I	Orion	5	2	5	7	3		2	4	7	2		37
I	Oritamerin	3	2	1					2				8
I	Os			1									1

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Oskarshamn				1								1
I	Oslo	25	30	23	19	36	32	31	24	31	29	51	331
I	Othmarschen	23	20	9	16	15	12	3	8	3	4	8	121
I	Ouakam			4					3	2		1	10
I	Overschie		3	3	2	2	1		1		5	2	19
I	Oxford	1		1									2
I	Oyonnax		2										2
I	Panama	149	148	196	174	173	158	194	181	172	158	198	1901
I	Papuana					3			1	1			5
I	Paratyphi A	142	121	180	184	138	176	187	182	150	135	131	1726
I	Paratyphi B	232	104	135	146	83	46	91	82	54	36	61	1070
I	Paratyphi B var. L(+) tartrate+	348	451	408	398	469	431	447	431	513	304	335	4535
I	Paratyphi C	2	1	1	1				2			1	8
I	Penarth			1									1
I	Pensacola	4	14	12	11	12	9	15	25	23	12	23	160
I	Pharr						1			2			3
I	Ploufragan								1				1
I	Plymouth		4	2	1	1	1						9
I	Poano	6	6	5	2		3	4	6	1		1	34
I	Poitiers		1										1
I	Pomona	69	68	89	65	86	80	49	73	72	48	48	747
I	Poona	232	194	200	248	495	235	268	275	276	286	322	3031
I	Portland	1		2		1				1	2	2	9
I	Potengi					1							1
I	Potsdam	4	4	18	16	23	31	16	21	26	18	45	222
I	Praha		1	1	1	1	1	3		1	1	2	12
I	Pramiso										1		1
I	Preston					1		1					2
I	Putten	4	9	2	5	9	25	5	12	4	6	23	104
I	Quiniela	2						1				1	4
I	Reading	74	55	50	57	46	53	33	42	58	56	104	628
I	Redlands			1						1		1	3
I	Remo	1		2	1		1						5
I	Rhone				1								1
I	Richmond	6	8	9	11	2	8	14	5	11	9	6	89
I	Rideau										1		1
I	Ridge				1					2			3
I	Riggil										1		1
I	Rissen	7	6	17	11	29	127	16	24	30	33	39	339
I	Riverside		1			1					2	2	6
I	Romanby	1	3	1	1	1	2	1					10
I	Roodepoort	3	3	9	1		2	1	1	1	4	3	28
I	Rovaniemi			1									1

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Rubislaw	104	100	94	119	120	88	144	179	140	183	225	1496
I	Ruiru		1										1
I	Saarbruecken			3		1		3		1		1	9
I	Saintemarie	1			1								2
I	Saintpaul	688	672	577	499	1814	850	881	703	764	977	980	9405
I	Salford			1		1							2
I	Sandiego	112	136	214	195	132	141	155	142	195	186	197	1805
I	Sangalkam	1											1
I	Sangera						1		5				6
I	Sanjuan			1	1								2
I	Sanktgeorg			2									2
I	Sao										2		2
I	Sapele									1			1
I	Saphra	4	5	1	1	7	1	3	2	7	4		35
I	Saugus										3		3
I	Schwarzengrund	146	137	163	300	326	346	393	262	290	249	219	2831
I	Schwerin		1										1
I	Selby	1											1
I	Senegal								2		1		3
I	Senftenberg	103	111	112	167	202	152	127	132	144	212	162	1624
I	Seremban	2						1					3
I	Serrekunda										1		1
I	Shipley	2		1	1								4
I	Shubra	2	2	2	2	12	5	3		5	1	2	36
I	Simi			2	1								3
I	Singapore	10	5	7	8	13	9	7	9	10	6	11	95
I	Sinstorf	1		1		1			1		1		5
I	Skansen										1	1	2
I	Soahanina		1								1	1	3
I	Soerenga	3	1	3	7	5	5	4	4	5	3	9	49
I	Solt									1	1		2
I	Somone			1								1	2
I	Southbank					1							1
I	Spalendor	2											2
I	Splott		1					1					2
I	Stachus	1	1		1								3
I	Stanley	185	222	306	256	217	165	230	209	212	179	206	2387
I	Stanleyville	6	7	5	6	10	9	4	5	7	3	7	69
I	Stellingen	1								1			2
I	Sternschanze				1								1
I	Stockholm		1		1								2
I	Stoneferry						1						1
I	Stormont								1				1
I	Stourbridge		1										1

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Strasbourg	1											1
I	Strathcona											1	1
I	Stuttgart									1			1
I	Suberu			1									1
I	Suelldorf	1		1	2	1	3		1	2	5	3	19
I	Sundsvall	6	9	3	3	5	3	2	5	3	1	2	42
I	Szentes											1	1
I	Tabligbo		1		1								2
I	Takoradi	5		4	1	5	6	2	4	3	1	2	33
I	Taksony											4	4
I	Tallahassee	3	7	11	7	4	5	6	2	4	10	8	67
I	Tamberma			1					1			1	3
I	Tanzania			1									1
I	Tarshyne							1			2	1	4
I	Teddington								2				2
I	Tees							2					2
I	Teko										1		1
I	Telekebir	29	45	52	68	28	26	28	16	23	22	19	356
I	Teltow											1	1
I	Tennessee	57	131	310	602	124	63	32	29	30	34	19	1431
I	Tennyson								1				1
I	Texas		1					2	1				4
I	Thompson	493	425	442	406	411	473	480	534	818	620	626	5728
I	Tilene		1	1			1	1	1		3	1	9
I	Tokoin		1					2					3
I	Tornow	3						2				1	6
I	Toucra	3	2	1				1		1	1	1	10
I	Travis	2					1					1	4
I	Treguier			1									1
I	Tripoli	2											2
I	Troy							1					1
I	Tschangu						1						1
I	Tsevie									3			3
I	Tshiongwé	1	4	3				2					10
I	Tucson		4		4	2	4	2	2	1	2		21
I	Typhi	305	350	411	442	477	427	477	382	364	364	527	4526
I	Typhimurium	6810	6950	6813	6152	6485	6087	6104	6120	5702	5563	5041	67827
I	Tyresoe	1		1		1							3
I	Uccle						1		1	2			4
I	Uganda	45	47	59	73	67	51	73	84	102	149	147	897
I	Ughelli		1										1
I	Umbilo			1					1		3		5
I	Umhlatazana									1			1
I	Uppsala	1		1	4				4				10

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I Urbana		59	43	35	59	53	40	38	67	60	39	25	518
I Utah						1		1		1			3
I Uzaramo		5		2		4	3				1	2	17
I Valdosta		2											2
I Vancouver					2	1		1			1		5
I Vanier										1			1
I Vejle		4	1				1	1					7
I Veneziana												1	1
I Victoria						1		1		1			3
I Vinohrady				1				1					2
I Virchow		76	82	72	74	106	81	98	75	133	66	66	929
I Vitkin					1						1		2
I Vleuten						1							1
I Volkmarsdorf		1											1
I Vuadens						1							1
I Wa					1								1
I Wagenia							1				1	1	3
I Wandsworth		2	3	7	68	6	4	6	5	3	6	5	115
I Wangata		3	3		2	3			1		1	7	20
I Waral								1					1
I Warmesen					1								1
I Waycross		2	5	2		3	6	1	3		4		26
I Wedding									1				1
I Welikade		1					1				2		4
I Weltevreden		94	91	92	83	90	73	79	56	75	61	69	863
I Wentworth		4											4
I Wernigerode			1								1		2
I Weslaco			2		1				3				6
I Westeinde			1										1
I Westhampton		5		3	7	1			1		4	9	30
I Widemarsh		1		2	2	6	4	3	3	32	13	6	72
I Wien				3	2		2		2		2	1	12
I Wil		1											1
I Willamette		1											1
I Wimborne										1			1
I Windermere										1			1
I Winneba		1											1
I Winston								2	1			1	4
I Woodinville						1		1	1		1		4
I Worthington		34	21	33	17	38	29	31	27	56	30	29	345
I Wyldegreen										1		1	2
I Yaba			1										1
I Yoruba				1						3			4
I Zaiman					1	1							2

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Zanzibar		1			3							4
I	Zaria								1				1
I	Zega		2								1		3
I	Zerifin	2											2
I	Zwickau			1							2		3
II	1,9,12,46,27:l,z13,z28:z39									1			1
II	11:g,[m],s,t:z39		1										1
II	13,22:g,m,t:[1,5]									1			1
II	13,22:z:-										1		1
II	13,22:z29:1,5							1					1
II	13,23:a:z42									1			1
II	13,23:b:[1,5]:z42							15	21	14			50
II	13,23:d:e,n,x					1							1
II	13,23:g:t:e,n,x							1					1
II	13,23:z:1,5									1			1
II	16:g,[m],[s],t:[1,5]								1		1		2
II	16:m,t:-							2	2		1		5
II	16:z35:e,n,x	1											1
II	16:z4,z23:-				1								1
II	17:b:-								1				1
II	17:g,t:[e,n,x,z15]					1					1		2
II	21:g,[m],[s],t:-				1	1			1			1	4
II	21:z10:z6]			1	2	1	4	1		2	1	2	14
II	3,10:l,z28:1,5										1		1
II	30:b:z6							1					1
II	30:l,z28:z6	1	1	1		1	1			1	1	1	8
II	35:l,z28:-			1									1
II	4,[5],12:a:-								1				1
II	4,12,[27]:b:[e,n,x]	1											1
II	4,12:-:1,6	1											1
II	40:b:-										1		1
II	40:c:e,n,x,z15						1		1	1			3
II	40:z39:1,7			1									1
II	40:z4,z24:z39									1			1
II	41:z10:z6				1	1							2
II	42:b:e,n,x,z15		1										1
II	42:z:e,n,x,z15						1						1
II	43:z4,z23:-											1	1
II	44:z4,z23:-		1										1
II	47:b:-										1		1
II	47:b:1,5	1	8	2	4	4	1		1		3		24
II	47:b:e,n,x,z15			1	2		2	3	2	1	1		12
II	47:b:z6				1								1
II	47:d:1,5								1				1

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
II	48:a:z39						1		1	1			3
II	48:a:z6			1	1	1			1	2	1	1	8
II	48:d:1,2	1											1
II	48:d:z6	1	1	2			2	1	1	1		1	10
II	48:z10:-										1		1
II	48:z39:z81	2	1										3
II	50:b:z6	2	1	2	2	2	1	2	1		1	3	17
II	55:k:z39					1							1
II	58:c:z6			2	1					1	2	1	7
II	58:d:z6	1						1					2
II	58:l,z13,z28:1,5						1						1
II	58:l,z13,z28:z6	1	1	2	8	7	5	4		2	9	1	40
II	6,7:-:1,6								1			1	2
II	6,7:b:z42		1										1
II	6,7:z:1,5			1									1
II	6,7:z:e,n,x											1	1
II	60:g,m,t:z6					1			1				2
II	9,12:a:1,5									1			1
II	9,12:b:-	1											1
II	9,12:g,m,s,t:e,n,x		1							1			2
II	9,12:g,s,t:e,n,x		1						1				2
II	9,12:l,w:e,n,x							1	1	1	1		4
II	9,12:z29:1,5								1	2		1	4
II	9,12:z39:1,7				1					1		2	4
II	9,46:m,t:e,n,x	1											1
IIIa	13,22:z4,z23:-			1	1				1	2	1	2	8
IIIa	13,23:g,z51:-			1		1		2	2	3	1	3	13
IIIa	13,23:z4,z23,[z32]:-					2		1					3
IIIa	13,23:z4,z24:-					1	6	1					8
IIIa	17:z29:-					1		1					2
IIIa	17:z36:-											1	1
IIIa	18:g,z51:-								1				1
IIIa	18:z36:-			1									1
IIIa	18:z4,z23:-	4	13	19	7	29	33	39	35	27	4	4	214
IIIa	18:z4,z32:-			1		2							3
IIIa	21:g,z51:-		2	2		2		2	1	1	1	2	13
IIIa	21:z29:-					2				1			3
IIIa	21:z36:-			1									1
IIIa	21:z4,z23:-						1			1			2
IIIa	21:z4,z32:-							1					1
IIIa	35:g,z51:-		1								1		2
IIIa	35:z29:-	1				1				1	1	1	5
IIIa	35:z4,z23:-		1	1	1	2	1	1		2			9
IIIa	35:z4,z32:-				2								2

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
IIIa	40:g,z51:-					2	1	2	3		1		9
IIIa	40:z36:-					1	1		1	1	1		5
IIIa	40:z4,z23:-			2		1	2	2			2	2	11
IIIa	40:z4,z24:-			1			1	1					3
IIIa	41:z4,z23,z32:-					1	1	1	1				4
IIIa	41:z4,z23:-	11	5	11	13	17	9	13	19	14	9	17	138
IIIa	41:z4,z24:-						2	1					3
IIIa	41:z4,z32:-						2	1	1	1			5
IIIa	42:g,z51:-				1						1	1	3
IIIa	42:z4,z23:-			1	1			2			1		5
IIIa	42:z4,z24:-		1			1		1		2			5
IIIa	43:g,z51:-							1					1
IIIa	43:z29:-		1			1		2					4
IIIa	43:z4,z23:-						2		3	3			8
IIIa	43:z4,z24:-		1										1
IIIa	44:z4,z23,z32:-				1				1	1		1	4
IIIa	44:z4,z23:-	1				1			1			1	4
IIIa	44:z4,z24:-			2		2	1	1			1		7
IIIa	44:z4,z32:-					1	1	1	1				4
IIIa	45:z4,z23:-							1					1
IIIa	47:g,z51:-									2		1	3
IIIa	47:z4,z23:-			3		1		4	1	2			11
IIIa	48:g,z51:-	3	3	6	8	16	15	6	18	16	14	21	126
IIIa	48:z29:-			1	1								2
IIIa	48:z36:-			1			1		1				3
IIIa	48:z4,z23,z32:-						1						1
IIIa	48:z4,z23:-										1	1	2
IIIa	48:z4,z24:-		3	4	3	6	4	3	14	13	2	5	57
IIIa	50:g,z51:-								2		1		3
IIIa	50:z29:-						1						1
IIIa	50:z36:-					1					1		2
IIIa	50:z4,z23,z32:-										1		1
IIIa	50:z4,z23:-				3	1	2		1	1	1	1	10
IIIa	50:z4,z32:-			1									1
IIIa	51:g,z51:-				1	1				1	2		5
IIIa	51:z4,z23:-	2		1		1	1		1	2	3	6	17
IIIa	51:z4,z24:-					1							1
IIIa	51:z4,z32:-										1		1
IIIa	53:g,z51:-		1										1
IIIa	53:z4,z23,z32:-						1	1	1				3
IIIa	53:z4,z23:-	1	3	5		4	3	1	4	9	4	1	35
IIIa	53:z4,z24:-		1							1	1		3
IIIa	56:z4,z23:-		3	1	5	3	2	2	5	3	4	4	32
IIIa	59:z4,z23:-											2	2

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
IIIa	63:z4,z23:-			2				1					3
IIIb	(6),14:l,v:z								1				1
IIIb	(6),14:z10:z						1						1
IIIb	11:k:z53		1										1
IIIb	11:l,v:z53			1									1
IIIb	13,23:z:1,5					2							2
IIIb	16:z10:e,n,x,z15	1			4	1	1		1	4	1	1	14
IIIb	17:i:z35									1			1
IIIb	17:z10:e,n,x,z15	1				1				1			3
IIIb	18:l,v:z	3					1						4
IIIb	21:k:z										1		1
IIIb	21:l,v:z									1			1
IIIb	35:i:e,n,x,z15								1				1
IIIb	35:i:z			1									1
IIIb	35:k:e,n,x,z15			1			2				1	1	5
IIIb	35:k:z53					1							1
IIIb	35:l,v:z35					1	4		3	1		2	11
IIIb	35:r:e,n,x,z15			1		1	1					1	4
IIIb	38:(k):-			1							1		2
IIIb	38:(k):1,5,7									2	2		4
IIIb	38:(k):z35			1	1	1		1		1	3		8
IIIb	38:i:z									1			1
IIIb	38:l,v:z53					2	1			1	2		6
IIIb	38:r:z		1										1
IIIb	42:(k):z35			1					2	1	1	3	8
IIIb	47:k:-						1	1		1		3	6
IIIb	47:k:z35	1		1	3	3		7	4	4	3	2	28
IIIb	47:k:z53					1		1				1	3
IIIb	47:r:z						1						1
IIIb	47:r:z53						1	1	1	3	1	1	8
IIIb	47:z10:z35				1			1					2
IIIb	48:-:z									1			1
IIIb	48:c:z					1				2		2	5
IIIb	48:i:z	3	4	9	7	5	3	1	7	7	8	8	62
IIIb	48:i:z35			1									1
IIIb	48:k:z53							1		1	1		3
IIIb	48:l,v:z								1				1
IIIb	48:r:e,n,x,z15				1								1
IIIb	48:r:z	1				1				2	3		7
IIIb	48:z4,z24:-									1		1	2
IIIb	48:z52:z	1	1		1	1				1			5
IIIb	50:k:-									1		2	3
IIIb	50:k:z	3		1	1	3	8	7	15	9	9	8	64
IIIb	50:k:z35						1				1		2

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
IIIb	50:k:z53			2	1			1	1	1			6
IIIb	50:l,v:z					1	1		1				3
IIIb	50:l,v:z35	1				1		1	2				5
IIIb	50:r:-								1	1			2
IIIb	50:r:1,5,(7)					2							2
IIIb	50:r:z	3	1	10	3	7	3	7	4	7	7	10	62
IIIb	50:r:z35				1								1
IIIb	50:z:z52						2		1	1	3		7
IIIb	50:z52:z35	1		1	1	1		5	1	2			12
IIIb	53:-:z53									1			1
IIIb	53:k:e,n,x,z15			1									1
IIIb	53:k:z									1			1
IIIb	53:z10:z				1	2							3
IIIb	53:z10:z35		1	1	1	2	4	2	3	1	1	5	21
IIIb	53:z52:z53				1	1			3				5
IIIb	58:l,v:z35										1		1
IIIb	58:z52:z35	1											1
IIIb	60:i:e,n,x,z15											1	1
IIIb	60:k:z35											2	2
IIIb	60:r:-							1					1
IIIb	60:r:e,n,x,z15	4	1	4	2	3	10	5	5	1	4	3	42
IIIb	60:r:z	1				1		3	1	3		6	15
IIIb	60:z52:z						1						1
IIIb	60:z52:z35					1							1
IIIb	60:z52:z53			2	1		1	1	2	1	1		9
IIIb	61:-:1,5,[7]	1	2		6	1	3	21	11	1		1	47
IIIb	61:(k):z53							1					1
IIIb	61:c:1,5,[7]					1	1						2
IIIb	61:c:z35	1	2	1	2	2	4	2	7	2	5	5	33
IIIb	61:i:z				2	1	1			2		1	7
IIIb	61:i:z35					1							1
IIIb	61:i:z53			1			1	1		1	3		7
IIIb	61:k:1,5,[7]		2	2	1		1	13	7			1	27
IIIb	61:l,v:-											1	1
IIIb	61:l,v:1,5,7	2	1	11	13	8	23	16	17	17	17	14	139
IIIb	61:l,v:z		3										3
IIIb	61:l,v:z35	1					1	1	2	1	2	4	12
IIIb	61:r:z	1						1			3		5
IIIb	61:r:z53				1								1
IIIb	61:z52:z53	1	1	4	2	5		4	5	4		1	27
IIIb	65:(k):z					2	1	2		1	1	1	8
IIIb	65:(k):z35				1	1	1		1				4
IIIb	65:(k):z53				1		1	1	1	1			5
IIIb	65:c:z53										1		1

Subspecies	Serotype	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
IIIb	65:l,v,z								1				1
IIIb	65:z10:e,n,x,z15			2		1				1		2	6
IV	11:g,z51:-					1			1				2
IV	11:z4,z23:-		1	3	1	1	1				4	1	12
IV	16:z4,z23:-		1										1
IV	16:z4,z24:-									1			1
IV	16:z4,z32:-	3	5	7	5	4	9	3	2		2	4	44
IV	17:z29:-											1	1
IV	18:z36,z38:-									1	1		2
IV	21:z4,z23:-		2							1			3
IV	21:z4,z32:-							1					1
IV	40:z4,z23:-					1					1	3	5
IV	40:z4,z24:-			1	2	1	1	2	2	1	3	2	15
IV	40:z4,z32:-		1	1	1		1				4	2	10
IV	41:z4,z23:-									1			1
IV	43:z36,z38:-	1											1
IV	43:z4,z23:-	7	1	4	1	2	3	5	2	5	3	1	34
IV	43:z4,z32:-		1				1			1			3
IV	44:z36,[z38]:-	1			1	1	1	6	6		3	6	25
IV	44:z4,z23:-	5	15	10	8	11	7	13	10	4	12	18	113
IV	44:z4,z24:-	2	1				4	2	3	1	4	5	22
IV	44:z4,z32:-	1	5	7		4	5		4	4	5	3	38
IV	45:g,z51:-	8	8	7	13	10	10	2	1	5	6	2	72
IV	48:g,z51:-	13	5	11	30	11	20	16	11	14	10	13	154
IV	48:z4,z24:-				1								1
IV	48:z4,z32:-	1		3	12	2	1	2		2	3		26
IV	50:g,z51:-	9	7	16	8	9	11	13	12	14	29	32	160
IV	50:z4,z23:-	7	5	56	83	42	22	9	9	15	9	10	267
IV	50:z4,z24:-										2		2
IV	50:z4,z32:-			2	1		3						6
IV	51:z4,z23:-							1					1
IV	53:z4,z23:-								1				1
IV	6,7:z4,z23:-											1	1
IV	6,7:z4,z24:-	2		1			5	1	5		1	4	19
V	bongori ser. 48:a:-							1					1
V	bongori ser. 48:z35:-	1	2			3						1	7
V	bongori ser. 48:z81:-					3		1		1		2	7
V	bongori ser. 66:z81:-	1											1
	Baltimore										1		1
	Partially serotyped	1444	1591	1322	1130	1520	1021	942	1039	1006	849	771	12635
	Rough, mucoid, and/or nonmotile isolates	58	40	109	97	126	129	228	219	319	233	187	1745
	Unknown	1804	1093	3543	3577	5136	2699	2910	3117	3600	2999	2954	33432
	Total	35334	35878	39643	38667	44408	39711	44570	44065	45783	40452	44444	452955

Appendix 3b. Partially serotyped culture-confirmed *Salmonella* infections reported to LEDS by serogroup and year, 2004–2014¹

Subspecies	Serogroup	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
I	Group O:1,3,19	6	7	7	2	2	1	2	1			1	29
I	Group O:11			1									1
I	Group O:13					1				1			2
I	Group O:2	1	2	5	7	4	7	9	2	2	1		40
I	Group O:3,10	34	33	14	14	16	10	7	18	4	5	14	169
I	Group O:30											1	1
I	Group O:38		1	1									2
I	Group O:4	389	446	498	350	525	356	237	290	223	253	317	3884
I	Group O:40			1								1	2
I	Group O:47			1									1
I	Group O:50										2		2
I	Group O:51			1									1
I	Group O:7	141	129	192	184	293	135	126	125	184	134	112	1755
I	Group O:8	151	184	95	81	110	73	93	106	117	53	52	1115
I	Group O:9	267	263	168	101	93	68	118	97	145	109	101	1530
I	Group O:9,46	3	4										7
I	Group O7									1			1
I	Unspecified	154	149	96	229	337	270	266	303	250	209	92	2355
II	Group O:48											1	1
II	Unspecified	149	8	2	18	18	12	9	18	12	5	4	255
III	Unspecified	40	71	50	53	46	34	41	35	26	27	21	444
IIIa	Group O:13			1									1
IIIa	Group O:40			1				1					2
IIIa	Group O:41						1					1	2
IIIa	Group O:48			1								1	2
IIIa	Group O:50							1				1	2
IIIa	Group O:51					2							2
IIIa	Group O:53									1			1
IIIa	Unspecified	23	26	20	8	15	15	8	10	13	14	11	163
IIIb	Group O:35	1	1	1	1				4		1	6	15
IIIb	Group O:38	1	4										5
IIIb	Group O:42		1										1
IIIb	Group O:47		3	16				1		1			21
IIIb	Group O:48									1			1
IIIb	Group O:50			1						1		2	4
IIIb	Group O:53					1						1	2
IIIb	Group O:60			1			1			1			3
IIIb	Group O:61			1	2	1		1		1			6
IIIb	Group O:65		1		1	1							3
IIIb	Unspecified											1	1

¹ The Pasteur Institute publishes the official list of known *Salmonella* serotypes and their respective serogroups. The document can be found at <http://www.pasteur.fr/ip/portal/action/WebdriveActionEvent/oid/01S-000036-089>

Subspecies	Serogroup	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total
IV	Group O:40							1					1
IV	Group O:43			1									1
IV	Group O:50			2									2
IV	Unspecified	33	42	33	57	35	22	8	14	5	8	10	267
V	bongori (Formerly Subspecies V)										1		1
VI	Unspecified			2	4			1					7
Unspecified	Group O:7										2		2
Unspecified	Group O:6,14		2			1		1			1		5
Unspecified	Group O:11	9	33	18	3					1	3		67
Unspecified	Group O:13	11	22	19	10	12	10	6	8	11	12	12	133
Unspecified	Group O:16	1	7	9		1	1		2		1		22
Unspecified	Group O:17		1	3			2					2	8
Unspecified	Group O:18		2	1						2		1	6
Unspecified	Group O:21		5	2									7
Unspecified	Group O:28	4	8	2				1			3		18
Unspecified	Group O:30		5	2	1	1					1		10
Unspecified	Group O:38			4		1	1						6
Unspecified	Group O:39			2				1	3	2			8
Unspecified	Group O:40	1	4	4					1				10
Unspecified	Group O:42					1							1
Unspecified	Group O:43		1								2		3
Unspecified	Group O:44	4	1					1			1	1	8
Unspecified	Group O:45	2		1	1							1	5
Unspecified	Group O:47		1	2	1					1			5
Unspecified	Group O:48	1	18	2	1	2	1		1				26
Unspecified	Group O:50	18	106	38	1		1	1	1		1	2	169
Unspecified	Group O:51											1	1
Unspecified	Group O:58							1					1
Unspecified	Group O:65					1							1
	Total	1444	1591	1322	1130	1520	1021	942	1039	1006	849	771	12635

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