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Estimated Illness Linked to Animal Contact for 7 Pathogens, United States, 2019

Appendix

Estimated Illness Linked to Contact with Animals and Their Environments — United States, 2019

Appendix Table 1. Estimation and uncertainty model inputs for *Campylobacter* spp. transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed <i>Campylobacter</i> illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 562, 698, 915, 1222, 1569 Refer to Appendix Table 16 for a full list of distribution values used.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed <i>Campylobacter</i> illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking and specimen submission	Each laboratory-confirmed <i>Campylobacter</i> illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission using a Bayesian approach based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018-2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5-64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence of fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥3 loose stools in 24 hours) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for <i>Campylobacter</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values:

Model input	Data source(s)	Distribution	Distribution values
Test sensitivity	Separate adjustments were made for <i>Campylobacter</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution. Modal and high value were calculated by assuming that uncertainty was a 50% relative increase/decrease from modal on an odds scale.	PERT	0.98, 1, 1, 1, 1 Low, modal, high values (culture only): 0.56, 0.66, 0.74
Proportion hospitalized	Proportion of laboratory-confirmed <i>Campylobacter</i> illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.10, 0.15, 0.21, 0.25, 0.34 Refer to Appendix Table 18 for a full list of distribution values used.
Proportion who died	Proportion of laboratory-confirmed <i>Campylobacter</i> illnesses reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.002, 0.003, 0.004, 0.010 Refer to Appendix Table 19 for a full list of distribution values used.
Underdiagnosis (hospitalizations, deaths)			
Specimen submission	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.61, 0.70, 0.78
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for <i>Campylobacter</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for <i>Campylobacter</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution. Modal and high value were calculated by assuming that uncertainty was a 50% relative increase/decrease from modal on an odds scale.	PERT	Low, modal, high values (culture only): 0.56, 0.66, 0.74
Proportion travel-related	Proportion of laboratory-confirmed <i>Campylobacter</i> illnesses with reported travel outside the United States within 7 days of illness onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.13, 0.18, 0.25
Proportion animal contact	Proportion of domestically acquired <i>Campylobacter</i> illnesses transmitted through animal contact based on a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.02, 0.08, 0.14, 0.25, 0.5

Appendix Table 2. Estimation and uncertainty model inputs for *Cryptosporidium* spp. transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed illnesses due to <i>Cryptosporidium</i> spp. reported to CDC's National Notifiable Diseases Surveillance System (NNDSS) by year (2016-2019).	Empirical	By year (2016-2019): 8638, 8043, 8980, 10185
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed <i>Cryptosporidium</i> spp. illnesses in each year from 2016-2019 based on US Census population estimates.	Degenerate	Ratios by year (2016-2019): 1.01, 1.01, 1.00, 1.00
Underreporting	Passive surveillance multiplier used to adjust for underreporting.	PERT	Low, modal, high values: 0.8, 1.15, 1.5
Underdiagnosis Medical care seeking and specimen submission	Each laboratory-confirmed <i>Cryptosporidium</i> spp. illness was adjusted for underdiagnosis due to medical care seeking and stool sample submission using a Bayesian approach based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018–2019 FoodNet Population Survey. Characteristics included age group (<5, 5–64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race). Acute diarrheal illness was defined as diarrhea (≥ 3 loose stools in 24 h) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).
Laboratory testing	Proportion of clinical laboratories routinely testing stool samples for <i>Cryptosporidium</i> spp. from the Foodborne Diseases Active Surveillance Network (FoodNet) Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 0.99, 1.00, 1.00, 1.00
Test sensitivity	Sensitivities of conventional tests including antigen test and microscopy (PERT: 0.81, 0.87, 0.91) (9) and PCR (PERT: 0.815, 1.00, 1.00) (10) were combined using proportional weighted random sampling with a proportion of 74% for conventional tests and 26% for PCR (5).	-	See data source(s) description
Proportion hospitalized	Ratio of hospitalizations from the National Inpatient Sample (NIS) using ICD-10-CM A072 (cryptosporidiosis) to illnesses reported to NNDSS by year (2016–2019).	Empirical	By year (2016-2019): 0.26, 0.27, 0.23, 0.25
Proportion who died	Ratio of deaths from the NIS using ICD-10-CM A072 (cryptosporidiosis) to illnesses reported to NNDSS by year (2016–2019).	Empirical	By year (2016-2019): 0.0081, 0.0044, 0.0050, 0.0088
Underdiagnosis (hospitalizations, deaths)	<i>Salmonella</i> non-typhoidal underdiagnosis multiplier applied.	-	-
Proportion travel-related	Proportion of laboratory-confirmed <i>Cryptosporidium</i> spp. illnesses with reported travel outside the United States in NNDSS (2016-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.08, 0.11, 0.16
Proportion animal contact	Proportion of domestically acquired <i>Cryptosporidium</i> spp. illnesses transmitted through animal contact based on a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.03, 0.11, 0.18, 0.34, 0.60

Appendix Table 3. Estimation and uncertainty model inputs for *Listeria monocytogenes* (non-pregnancy) transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of invasive non-pregnancy-associated <i>Listeria monocytogenes</i> infections reported to CDC's <i>Listeria</i> Initiative (2016-2019) (11).	Empirical	By year (2016-2019): 639, 650, 661, 667
Population adjustment (year)	Population ratios applied to each year from 2016-2019 based on average 2017-2019 US Census population estimates (2).	Degenerate	Adjustment by year (2016-2019): 1.01, 1.01, 1, 1
Underreporting	No underreporting multiplier. We assumed all diagnosed cases were reported because of the severity of invasive listeriosis; an assumption supported by similar reporting rates in FoodNet and non-FoodNet sites.	-	-
Underdiagnosis			
Medical care seeking	Assumed to have a high rate of medical care seeking.	PERT	Low, modal, high values: 0.8, 0.9, 1
Specimen submission	Almost all cases assumed to submit a specimen for testing.	PERT	Low, modal, high values: 0.95, 1, 1
Laboratory testing	We assumed that most persons with listeriosis who submitted a specimen for testing would be tested for listeriosis.	PERT	Low, modal, high values: 0.94, 0.97, 1
Laboratory test sensitivity	71% based on published study of blood culture sensitivity (12).	PERT	Low, modal, high values: 0.55, 0.71, 0.83
Hospitalized	Number of invasive non-pregnancy-associated <i>Listeria monocytogenes</i> illnesses that resulted in hospitalization reported to CDC's <i>Listeria</i> Initiative (2016-2019).	Empirical	By year (2016-2019): 553, 571, 579, 585
Died	Number of invasive non-pregnancy-associated <i>Listeria monocytogenes</i> illnesses that resulted in death reported to CDC's <i>Listeria</i> Initiative (2016-2019).	Empirical	By year (2016-2019): 96, 103, 110, 105
Underdiagnosis (hospitalizations, deaths)	Underdiagnosis multiplier for <i>Listeria monocytogenes</i> illnesses applied.	-	-
Proportion travel-related	Proportion of invasive <i>Listeria monocytogenes</i> illnesses reporting travel outside the United States within 30 days of illness onset (2016-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.02, 0.03, 0.05
Proportion animal contact	Assumed 1% due to animal contact (13).	PERT	Low, modal, high values: 0.005, 0.01, 0.02

Appendix Table 4. Estimation and uncertainty model inputs for *Listeria monocytogenes* (pregnancy [mothers]) transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of invasive pregnancy-associated <i>Listeria monocytogenes</i> illnesses in mothers reported to CDC's Listeria Initiative (2016-2019) (11). Episodes of invasive illness in the mother were counted if <i>Listeria monocytogenes</i> was isolated from an invasive specimen source associated with the mother or products of conception or if the mother of an invasive case reported symptoms. Population ratios applied to each year from 2016-2019 based on average 2017-2019 US Census population estimates (2).	Empirical	By year (2016-2019): 51, 72, 65, 77
Population adjustment (year)	No underreporting multiplier. We assumed all diagnosed cases were reported because of the severity of invasive listeriosis; an assumption supported by similar reporting rates in FoodNet and non-FoodNet sites.	Degenerate	Adjustment by year (2016-2019): 1.01, 1.01, 1, 1
Underreporting		-	-
Underdiagnosis			
Medical care seeking	Assumed to have a high rate of medical care seeking.	PERT	Low, modal, high values: 0.8, 0.9, 1
Specimen submission	Almost all cases assumed to submit a specimen for testing.	PERT	Low, modal, high values: 0.95, 1, 1
Laboratory testing	We assumed that most persons with listeriosis who submitted a specimen for testing would be tested for <i>Listeria monocytogenes</i> .	PERT	Low, modal, high values: 0.94, 0.97, 1
Laboratory test sensitivity	71% based on published study of blood culture sensitivity (12).	PERT	Low, modal, high values: 0.55, 0.71, 0.83
Hospitalized	Number of invasive pregnancy-associated <i>Listeria monocytogenes</i> illnesses in mothers that resulted in hospitalization reported to CDC's Listeria Initiative (2016-2019).	Empirical	By year (2016-2019): 39, 51, 45, 50
Died	Number of invasive pregnancy-associated <i>Listeria monocytogenes</i> illnesses in mothers that resulted in death reported to CDC's Listeria Initiative (2016-2019).	Empirical	By year (2016-2019): 0, 0, 0, 0
Underdiagnosis (hospitalizations, deaths)	Underdiagnosis multiplier for <i>Listeria monocytogenes</i> illnesses applied.		
Proportion travel-related	Proportion of invasive <i>Listeria monocytogenes</i> illnesses reporting travel outside the United States within 30 days of illness onset (2016-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.02, 0.03, 0.05
Proportion animal contact	Assumed 1% due to animal contact (13).	PERT	Low, modal, high values: 0.005, 0.01, 0.02

Appendix Table 5. Estimation and uncertainty model inputs for *Listeria monocytogenes* (pregnancy [infants, liveborn]) transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of invasive pregnancy-associated <i>Listeria monocytogenes</i> illnesses in liveborn infants reported to CDC's <i>Listeria</i> Initiative (2016-2019) (11). Episodes of invasive illness in the infant were counted if <i>Listeria monocytogenes</i> was isolated from an invasive specimen source associated with the infant or products of conception or if the infant of an invasive case reported symptoms. Population ratios applied to each year from 2016-2019 based on average 2017-2019 US Census population estimates (2).	Empirical	By year (2016-2019): 50, 54, 54, 71
Population adjustment (year)	No underreporting multiplier. We assumed all diagnosed cases were reported because of the severity of invasive listeriosis; an assumption supported by similar reporting rates in FoodNet and non-FoodNet sites.	Degenerate	Adjustment by year (2016-2019): 1.01, 1.01, 1, 1
Underreporting		-	-
<u>Underdiagnosis</u>			
Medical care seeking	Assumed to have a high rate of medical care seeking.	PERT	Low, modal, high values: 0.8, 0.9, 1
Specimen submission	Almost all cases assumed to submit a specimen for testing.	PERT	Low, modal, high values: 0.95, 1, 1
Laboratory testing	We assumed that most persons with listeriosis who submitted a specimen for testing would be tested for <i>Listeria monocytogenes</i> .	PERT	Low, modal, high values: 0.94, 0.97, 1
Laboratory test sensitivity	71% based on published study of blood culture sensitivity (12).	PERT	Low, modal, high values: 0.55, 0.71, 0.83
Hospitalized	Number of invasive pregnancy-associated <i>Listeria monocytogenes</i> infections in liveborn infants that resulted in hospitalization reported to CDC's <i>Listeria</i> Initiative (2016-2019).	Empirical	By year (2016-2019): 44, 41, 40, 60
Died	Number of invasive pregnancy-associated <i>Listeria monocytogenes</i> illnesses in liveborn infants that resulted in death reported to CDC's <i>Listeria</i> Initiative (2016-2019).	Empirical	By year (2016-2019): 0, 5, 3, 6
Underdiagnosis (hospitalizations, deaths)	Underdiagnosis multiplier for <i>Listeria monocytogenes</i> illnesses applied.		
Proportion travel-related	Proportion of invasive <i>Listeria monocytogenes</i> illnesses reporting travel outside the United States within 30 days of illness onset (2016-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.02, 0.03, 0.05
Proportion animal contact	Assumed 1% due to animal contact (13).	PERT	Low, modal, high values: 0.005, 0.01, 0.02

Appendix Table 6. Estimation and uncertainty model inputs for *Listeria monocytogenes* (pregnancy [fetal deaths]) transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Number of fetal deaths	Number of invasive pregnancy-associated <i>Listeria monocytogenes</i> illnesses resulting in fetal deaths reported to CDC's <i>Listeria</i> Initiative (2016-2019) (11).	Empirical	By year (2016-2019): 18, 25, 25, 24
Population adjustment (year)	Population ratios applied to each year from 2016-2019 based on average 2017-2019 US Census population estimates (2).	Degenerate	Adjustment by year (2016-2019): 1.01, 1.01, 1, 1
Underdiagnosis (hospitalizations, deaths)	Underdiagnosis based on the underdiagnosis multiplier for <i>Listeria monocytogenes</i> illnesses.		
Proportion travel-related	Proportion of invasive <i>Listeria monocytogenes</i> illnesses reporting travel outside the United States within 30 days of illness onset (2016-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.02, 0.03, 0.05
Proportion animal contact	Assumed 1% due to animal contact (13).	PERT	Low, modal, high values: 0.005, 0.01, 0.02

Appendix Table 7. Estimation and uncertainty model inputs for *Salmonella* non-typhoidal serotype Enteritidis transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed <i>S. Enteritidis</i> illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1). <i>Salmonella</i> serotypes with serotype not identified were randomly assigned to one of the six serotype groups with weights equal to the proportions of isolates with known serotype.	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 46, 94, 120, 213, 428 Refer to Appendix Table 16 for a full list of distribution values.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed <i>S. Enteritidis</i> illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking specimen submission	Each laboratory-confirmed <i>S. Enteritidis</i> illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018-2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5-64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence of fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥ 3 loose stools in 24 hours) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDs). We	PERT	Low, modal, high values (culture only): 0.86, 0.90, 0.93

Model input	Data source(s)	Distribution	Distribution values
	assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.		
Proportion hospitalized	Proportion of laboratory-confirmed <i>S. Enteritidis</i> illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.15, 0.23, 0.27, 0.33, 0.41 Refer to Appendix Table 18 for a full list of distribution values used.
Proportion who died	Proportion of laboratory-confirmed <i>S. Enteritidis</i> illnesses reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0, 0, 0.010, 0.031 Refer to Appendix Table 19 for a full list of distribution values used.
Underdiagnosis (hospitalizations, deaths)			
Specimen submission	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.61, 0.70, 0.78
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on-or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.86, 0.90, 0.93
Proportion travel-related	Proportion of laboratory-confirmed <i>S. Enteritidis</i> illnesses with reported travel outside the United States within 7 days of illness onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.16, 0.22, 0.30
Proportion animal contact	Proportion of domestically acquired <i>S. Enteritidis</i> illnesses transmitted through animal contact based on a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.01, 0.02, 0.09, 0.30

Appendix Table 8. Estimation and uncertainty model inputs for *Salmonella* non-typhoidal serotype I 4,[5],12:i:- transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed S. I 4,[5],12:i:- illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1). <i>Salmonella</i> serotypes with serotype not identified were randomly assigned to one of the six serotype groups with weights equal to the proportions of isolates with known serotype.	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 16, 29, 43, 68, 125 Refer to Appendix Table 16 for a full list of distribution values.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed S. I 4,[5],12:i:- illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking and specimen submission	Each laboratory-confirmed S. I 4,[5],12:i:- illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018-2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5-64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence of fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥ 3 loose stools in 24 hours) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.88, 0.92, 0.95
Proportion hospitalized	Proportion of laboratory-confirmed S. I 4,[5],12:i:- illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.10, 0.21, 0.29, 0.36, 0.49 Refer to Appendix Table 18 for a full list of distribution values used.
Proportion who died	Proportion of laboratory-confirmed S. I 4,[5],12:i:- illnesses reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0, 0, 0, 0.077 Refer to Appendix Table 19 for a full list of distribution values used.
Underdiagnosis (Hospitalizations, deaths) Specimen submission	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published	PERT	Low, modal, high values: 0.61, 0.70, 0.78

Model input	Data source(s)	Distribution	Distribution values
Laboratory testing	studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale. We accounted for the percentage of laboratories that routinely tested (on- or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.88, 0.92, 0.95
Proportion travel-related	Proportion of laboratory-confirmed S. I 4,[5],12:i:- illnesses with reported travel outside the United States within 7 days of illness onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.07, 0.10, 0.14
Proportion animal contact	Proportion of domestically acquired S. I 4,[5],12:i:- illnesses transmitted through animal contact based on a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.07, 0.10, 0.18, 0.40

Appendix Table 9. Estimation and uncertainty model inputs for *Salmonella* non-typhoidal serotype Javiana transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed S. Javiana illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1). <i>Salmonella</i> serotypes with serotype not identified were randomly assigned to one of the six serotype groups with weights equal to the proportions of isolates with known serotype.	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 12, 17, 24, 88, 484 Refer to Appendix Table 16 for a full list of distribution values.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed S. Javiana illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking and specimen submission	Each laboratory-confirmed for S. Javiana illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018-2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5-64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥3 loose stools in 24 hours) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).

Model input	Data source(s)	Distribution	Distribution values
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.82, 0.87, 0.91
Proportion hospitalized	Proportion of laboratory-confirmed <i>S. Javiana</i> illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.17, 0.24, 0.31, 0.42 Refer to Appendix Table 18 for a full list of distribution values used.
Proportion who died	Proportion of laboratory-confirmed <i>S. Javiana</i> illnesses reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0, 0, 0, 0.033 Refer to Appendix Table 19 for a full list of distribution values used.
Underdiagnosis (Hospitalizations, deaths)			
Specimen submission	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.61, 0.70, 0.78
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.82, 0.87, 0.91
Proportion travel-related	Proportion of laboratory-confirmed <i>S. Javiana</i> illnesses with reported travel outside the United States within 7 days of onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.03, 0.05, 0.07
Proportion animal contact	Proportion of domestically acquired <i>S. Javiana</i> illnesses transmitted through animal contact based on a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.08, 0.12, 0.19, 0.55

Appendix Table 10. Estimation and uncertainty model inputs for *Salmonella* non-typhoidal serotype Newport transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed <i>S. Newport</i> illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1). <i>Salmonella</i> serotypes with serotype not identified were randomly assigned to one of the six serotype groups with weights equal to the proportions of isolates with known serotype.	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 24, 35, 51, 98, 423 Refer to Appendix Table 16 for a full list of distribution values.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed nontyphoidal <i>Salmonella</i> illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking and specimen submission	Each laboratory-confirmed <i>S. Newport</i> illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018-2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5-64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥ 3 loose stools in 24 hours) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for <i>S. Newport</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.87, 0.91, 0.94
Proportion hospitalized	Proportion of laboratory-confirmed <i>S. Newport</i> illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.10, 0.20, 0.27, 0.33, 0.46 Refer to Appendix Table 18 for a full list of distribution values used.
Proportion who died	Proportion of laboratory-confirmed <i>S. Newport</i> illnesses reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0, 0, 0, 0.031 Refer to Appendix Table 19 for a full list of distribution values used.
Underdiagnosis (Hospitalizations, deaths) Specimen submission	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published	PERT	Low, modal, high values: 0.61, 0.70, 0.78

Model input	Data source(s)	Distribution	Distribution values
Laboratory testing	studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale. We accounted for the percentage of laboratories that routinely tested (on- or off-site) for <i>S. Newport</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.87, 0.91, 0.94
Proportion travel-related	Proportion of laboratory-confirmed <i>S. Newport</i> illnesses with reported travel outside the United States within 7 days of illness onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.05, 0.07, 0.10
Proportion animal contact	Proportion of domestically acquired <i>S. Newport</i> illnesses transmitted through animal contact based on a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.05, 0.08, 0.12, 0.25

Appendix Table 11. Estimation and uncertainty model inputs for *Salmonella* non-typhoidal serotype Typhimurium transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed <i>S. Typhimurium</i> illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1). <i>Salmonella</i> serotypes with serotype not identified were randomly assigned to one of the six serotype groups with weights equal to the proportions of isolates with known serotype .	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 35, 54, 68, 103, 212 Refer to Appendix Table 16 for a full list of distribution values.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed <i>S. Typhimurium</i> illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking and specimen submission	Each laboratory-confirmed <i>S. Typhimurium</i> illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018-2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5-64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥ 3 loose stools in 24 hours) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).

Model input	Data source(s)	Distribution	Distribution values
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.89, 0.92, 0.95
Proportion hospitalized	Proportion of laboratory-confirmed <i>S. Typhimurium</i> illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.07, 0.22, 0.29, 0.35, 0.44 Refer to Appendix Table 18 for a full list of distribution values used.
Proportion who died	Proportion of laboratory-confirmed <i>S. Typhimurium</i> illnesses reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0, 0, 0.013, 0.042 Refer to Appendix Table 19 for a full list of distribution values used.
Underdiagnosis (Hospitalizations, deaths)			
Specimen submission	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.61, 0.70, 0.78
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.89, 0.92, 0.95
Proportion travel-related	Proportion of laboratory-confirmed <i>S. Typhimurium</i> illnesses with reported travel outside the United States within 7 days of illness onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.05, 0.07, 0.10
Proportion animal contact	Proportion of domestically acquired <i>S. Typhimurium</i> illnesses transmitted through animal contact based on a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.08, 0.12, 0.19, 0.30

Appendix Table 12. Estimation and uncertainty model inputs for *Salmonella* (non-typhoidal, other serotype) transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed <i>S. Other</i> illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1). <i>Salmonella</i> serotypes with serotype not identified were randomly assigned to one of the six serotype groups with weights equal to the proportions of isolates with known serotype.	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 149, 204, 278, 397, 1252 Refer to Appendix Table 16 for a full list of distribution values.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed <i>S. Other</i> illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking and specimen submission	Each laboratory-confirmed <i>S. Other</i> illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018-2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5-64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥ 3 loose stools in 24 hours) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.85, 0.89, 0.92
Proportion hospitalized	Proportion of laboratory-confirmed <i>S. Other</i> illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.15, 0.24, 0.27, 0.30, 0.34 Refer to Appendix Table 18 for a full list of distribution values used.
Proportion who died	Proportion of laboratory-confirmed <i>S. Other</i> illnesses reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.001, 0.004, 0.007, 0.018 Refer to Appendix Table 19 for a full list of distribution values used.
Underdiagnosis (Hospitalizations, deaths) Specimen submission	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published	PERT	Low, modal, high values: 0.61, 0.70, 0.78

Model input	Data source(s)	Distribution	Distribution values
Laboratory testing	studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale. We accounted for the percentage of laboratories that routinely tested (on- or off-site) for nontyphoidal <i>Salmonella</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.98, 1, 1, 1, 1
Test sensitivity	Separate adjustments were made for nontyphoidal <i>Salmonella</i> confirmed using culture and culture-independent diagnostic tests (CIDsTs). We assumed that CIDsTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.85, 0.89, 0.92
Proportion travel-related	Proportion of laboratory-confirmed <i>S. Other</i> illnesses with reported travel outside the United States within 7 days of illness onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.08, 0.11, 0.16
Proportion animal contact	Proportion of domestically acquired <i>S. Other</i> serotypes group 1 and group 2 illnesses transmitted through animal contact based on a structured expert judgment study (8). Empirical distributions for serotypes group 1 and group 2 were combined using a random sampling scheme.	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.07, 0.12, 0.22, 0.45

Appendix Table 13. Estimation and uncertainty model inputs for Shiga toxin-producing *Escherichia coli* (STEC) O157 transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed STEC O157 illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1). STEC isolates with serogroup missing were imputed to O157 or non-O157 with a supervised random forest model using patients' demographics, symptoms, severity of illness, year of illness, international travel history, and outbreak association.	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 18, 33, 56, 86, 208 Refer to Appendix Table 16 for a full list of distribution values.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed STEC illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking and specimen submission	Each laboratory confirmed STEC O157 illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018-2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5-64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥3 loose stools in 24 hours) lasting >1 day or resulting in restricted daily activities, excluding people	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).

Model input	Data source(s)	Distribution	Distribution values
Laboratory testing	who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome. We accounted for the percentage of laboratories that routinely tested (on- or off-site) for STEC O157 using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.90, 0.96, 0.99, 1, 1
Test sensitivity	We assumed that CIDs were 100% sensitive.	Degenerate	Value: 1
Proportion hospitalized	Proportion of laboratory confirmed STEC O157 illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.24, 0.34, 0.42, 0.53, 0.61 Refer to Appendix Table 18 for a full list of distribution values used.
Proportion who died	Proportion of laboratory confirmed STEC O157 illnesses reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0, 0.002, 0.014, 0.049 Refer to Appendix Table 19 for a full list of distribution values used.
Underdiagnosis (Hospitalizations, deaths)			
Specimen submission	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.61, 0.70, 0.78
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for STEC O157 using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.90, 0.96, 0.99, 1, 1
Test sensitivity	We assumed that CIDs were 100% sensitive.	Degenerate	Value: 1
Proportion travel-related	Proportion of laboratory confirmed STEC illnesses with reported travel outside the United States within 7 days of illness onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.06, 0.09, 0.13
Proportion animal contact	Proportion of domestically acquired STEC O157 illnesses transmitted through animal contact based on a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.01, 0.07, 0.1, 0.18, 0.3

Appendix Table 14. Estimation and uncertainty model inputs for Shiga toxin-producing *Escherichia coli* (STEC) non-O157 strains transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed non-O157 STEC illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 88, 131, 204, 271, 499 Refer to Appendix Table 16 for a full list of distribution values.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed non-O157 STEC illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking and specimen submission	Each laboratory-confirmed non-O157 STEC illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018-2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5-64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥ 3 loose stools in 24 hours) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for non-O157 STEC using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.90, 0.96, 0.99, 1, 1
Test sensitivity	We assumed that CDTs were 100% sensitive.	Degenerate	Value: 1
Proportion hospitalized	Proportion of laboratory-confirmed non-O157 STEC illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.06, 0.12, 0.14, 0.19, 0.30 Refer to Appendix Table 18 for a full list of distribution values used.
Proportion who died	Proportion of laboratory-confirmed non-O157 STEC illnesses reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0, 0.002, 0.005, 0.013 Refer to Appendix Table 19 for a full list of distribution values used.
Underdiagnosis (Hospitalizations, deaths) Specimen submission	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.61, 0.70, 0.78
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for non-O157 STEC using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values:

Model input	Data source(s)	Distribution	Distribution values
Test sensitivity	We assumed that CIDTs were 100% sensitive.	Degenerate	0.90, 0.96, 0.99, 1, 1 Value: 1
Proportion travel-related	Proportion of laboratory-confirmed non-O157 STEC illnesses with reported travel outside the United States within 7 days of illness onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.17, 0.23, 0.31
Proportion animal contact	Proportion of domestically acquired non-O157 STEC illnesses transmitted through animal contact based on a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0.12, 0.2, 0.37, 0.5

Appendix Table 15. Estimation and uncertainty model inputs for non-pestis *Yersinia* transmitted through contact with animals and their environments

Model input	Data source(s)	Distribution	Distribution values
Reported illnesses	Number of laboratory-confirmed non-pestis <i>Yersinia</i> illnesses reported to the Foodborne Diseases Active Surveillance Network (FoodNet) by FoodNet site (n=10) and year (2017-2019) (1).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 7, 30, 53, 69, 126 Refer to Appendix Table 16 for a full list of distribution values used.
Population adjustment (year)	Population ratios applied to the number of laboratory-confirmed non-pestis <i>Yersinia</i> illnesses in each year and FoodNet site combination based on average 2017-2019 US Census population estimates (2).	Degenerate	Minimum, lower quartile, median, upper quartile, maximum values: 30.7, 54.1, 77.1, 91.4, 156.1 Refer to Appendix Table 17 for a full list of distribution values used.
Underreporting	No underreporting multiplier. We assumed that all laboratory-confirmed illnesses were enumerated by FoodNet active surveillance.	-	-
Underdiagnosis Medical care seeking and specimen submission	Each laboratory-confirmed non-pestis <i>Yersinia</i> illness in FoodNet surveillance was adjusted for underdiagnosis due to medical care seeking and stool sample submission using a Bayesian approach based on the characteristics of people with acute diarrheal illness who reported seeking medical care and submitting a stool sample in the 2018–2019 FoodNet Population Survey (3). Characteristics included age group (<5, 5–64, 65+ years), sex, race and ethnicity (Hispanic; non-Hispanic Black; non-Hispanic white; non-Hispanic other race), and the presence fever and bloody diarrhea. Acute diarrheal illness was defined as diarrhea (≥3 loose stools in 24 h) lasting >1 day or resulting in restricted daily activities, excluding people who said that their illness was due to a long-lasting or chronic illness or condition, such as colitis or irritable bowel syndrome.	Posterior	See Scallan Walter et al. (2025) for a more detailed explanation of this approach (4).
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for non-pestis <i>Yersinia</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.95, 0.99, 1, 1, 1
Test sensitivity	Separate adjustments were made for non-pestis <i>Yersinia</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.	PERT	Low, modal, high values (culture only): 0.42, 0.52, 0.62

Model input	Data source(s)	Distribution	Distribution values
Proportion hospitalized	<p>Modal and high value were calculated by assuming that uncertainty was a 50% relative increase/decrease from modal on an odds scale.</p> <p>Proportion of laboratory-confirmed non-pestis <i>Yersinia</i> illnesses reported to FoodNet that resulted in hospitalization by FoodNet site (n=10) and year (2017-2019).</p>	Empirical	<p>Minimum, lower quartile, median, upper quartile, maximum values: 0.07, 0.16, 0.26, 0.35, 0.67</p> <p>Refer to Appendix Table 18 for a full list of distribution values used.</p>
Proportion who died	Proportion of laboratory-confirmed non-pestis <i>Yersinia</i> reported to FoodNet that resulted in death by FoodNet site (n=10) and year (2017-2019).	Empirical	<p>Minimum, lower quartile, median, upper quartile, maximum values: 0, 0, 0, 0.01, 0.13</p> <p>Refer to Appendix Table 19 for a full list of distribution values used.</p>
Underdiagnosis			
Specimen submission (Hospitalizations, deaths)	Proportion of hospitalized patients with nonspecific gastroenteritis diagnosis codes who submitted a stool sample for bacterial culture from two published studies (6,7). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.61, 0.70, 0.78
Laboratory testing	We accounted for the percentage of laboratories that routinely tested (on- or off-site) for non-pestis <i>Yersinia</i> using data from the FoodNet Laboratory Survey (5).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0.95, 0.99, 1, 1, 1
Test sensitivity	<p>Separate adjustments were made for non-pestis <i>Yersinia</i> illnesses confirmed using culture and culture-independent diagnostic tests (CIDTs). We assumed that CIDTs were 100% sensitive and estimated the sensitivity of culture using reflex culture data from FoodNet. That is, sensitivity of culture was estimated as the proportion of positive reflex cultures among all reflex cultures in FoodNet, and assuming this to be a lower bound, this value was used as the lower parameter of the PERT distribution.</p> <p>Modal and high value were calculated by assuming that uncertainty was a 50% relative increase/decrease from modal on an odds scale.</p>	PERT	Low, modal, high values (culture only): 0.42, 0.52, 0.62
Proportion travel-related	Proportion of laboratory-confirmed non-pestis <i>Yersinia</i> illnesses with reported travel outside the United States within 7 days of illness onset (2017-2019). Uncertainty with this proportion was based on a 50% relative increase/decrease on an odds scale.	PERT	Low, modal, high values: 0.05, 0.07, 0.10
Proportion animal contact	Proportion of domestically acquired <i>Yersinia enterocolitica</i> illnesses transmitted through animal contact from a structured expert judgment study (8).	Empirical	Minimum, lower quartile, median, upper quartile, maximum values: 0, 0, 0.03, 0.07, 0.20

Appendix Table 16. Number of illnesses reported to Foodborne Diseases Active Surveillance Network (FoodNet) by pathogen, year, and site*

Pathogen	Year	FoodNet site									
		CA	CO	CT	GA	MD	MN	NM	NY	OR	TN
<i>Campylobacter</i>	2017	1279	562	659	1179	864	1554	760	679	1072	908
	2018	1306	655	743	1417	950	1569	611	690	969	922
	2019	1237	647	724	1395	886	1489	686	794	1018	923
STEC O157	2017	81	42	33	80	47	190	18	33	88	123
	2018	62	27	33	113	50	208	20	44	90	108
	2019	76	47	31	78	42	194	24	20	82	76
Non-O157 STEC	2017	210	180	95	287	153	343	88	95	203	198
	2018	212	199	106	351	204	399	102	124	207	256
	2019	276	238	103	401	192	499	95	156	221	293
<i>Salmonella</i> Enteritidis	2017	115	66	121	396	215	249	46	109	88	189
	2018	118	76	109	428	207	285	50	114	102	183
	2019	107	86	145	383	240	216	53	130	92	190
<i>Salmonella</i> I 4,[5],12:i:-	2017	44	39	25	100	74	100	20	41	33	68
	2018	35	29	30	125	47	90	25	45	42	55
	2019	45	18	21	95	52	77	16	32	27	67
<i>Salmonella</i> Javiana	2017	17	12	24	317	109	19	28	13	25	79
	2018	24	14	15	484	114	24	33	17	19	119
	2019	17	12	19	390	91	30	32	21	14	107
<i>Salmonella</i> Newport	2017	33	29	26	366	79	56	53	47	24	101
	2018	68	59	34	423	110	41	91	33	46	127
	2019	41	32	37	366	113	53	49	39	34	114
<i>Salmonella</i> Typhimurium	2017	52	66	62	174	89	98	52	46	67	123
	2018	68	46	71	212	102	112	42	63	75	180
	2019	67	41	60	198	103	75	35	48	62	133
Other <i>Salmonella</i> , non-typhoidal†	2017	329	168	203	982	311	417	149	199	207	398
	2018	293	168	240	1252	352	492	164	262	238	448
	2019	359	191	232	1239	395	367	173	219	213	489
<i>Yersinia</i> , non-pestis	2017	21	64	53	61	53	98	11	28	62	47
	2018	12	35	67	71	64	114	7	23	42	42
	2019	17	70	119	102	100	126	9	39	54	45

*The states of Connecticut, Georgia, Maryland, Minnesota, New Mexico, Oregon, Tennessee, and selected counties in California, Colorado, and New York.

† *Salmonella* Paratyphi was excluded from all analyses in this paper.

Appendix Table 17. Ratio of the average of the 2017-2019 US census population to population by year and site of Foodborne Diseases Active Surveillance Network (FoodNet).

Year	FoodNet site*									
	CA	CO	CT	GA	MD	MN	NM	NY	OR	TN
2017	88.72	103.49	91.39	31.37	54.21	58.67	156.13	76.27	78.79	48.66
2018	88.38	102.15	91.41	31.06	54.08	58.26	156.07	76.35	78.11	48.21
2019	88.31	101.18	91.63	30.75	53.97	57.94	155.63	76.60	77.50	47.84

*The states of Connecticut, Georgia, Maryland, Minnesota, New Mexico, Oregon, Tennessee, and selected counties in California, Colorado, and New York.

Appendix Table 18. Proportion of laboratory-confirmed illness that resulted in hospitalization from Foodborne Diseases Active Surveillance Network (FoodNet) by pathogen, year, and site.

Pathogen	Year	FoodNet site*									
		CA	CO	CT	GA	MD	MN	NM	NY	OR	TN
<i>Campylobacter</i>	2017	0.0987	0.1921	0.1905	0.3440	0.2473	0.1718	0.2582	0.2407	0.1290	0.3416
	2018	0.0961	0.1296	0.2081	0.3231	0.2241	0.1504	0.2385	0.2143	0.1277	0.3203
	2019	0.1221	0.1869	0.2067	0.3423	0.2305	0.1592	0.2390	0.2406	0.1398	0.3146
STEC O157	2017	0.3266	0.5139	0.5298	0.5860	0.4705	0.2883	0.4394	0.2448	0.3438	0.4531
	2018	0.2533	0.4892	0.4256	0.5530	0.3636	0.2556	0.5364	0.4162	0.4016	0.4243
	2019	0.3245	0.3744	0.5624	0.5794	0.3395	0.3440	0.6025	0.5955	0.2986	0.6126
non-O157 STEC	2017	0.0826	0.1366	0.1758	0.3048	0.1660	0.1345	0.1164	0.1994	0.1173	0.1627
	2018	0.1219	0.1142	0.1425	0.2481	0.1460	0.1676	0.1397	0.1983	0.1439	0.2358
	2019	0.0616	0.1301	0.1827	0.2288	0.1482	0.1368	0.1146	0.2053	0.1194	0.2561
<i>Salmonella</i> Enteritidis	2017	0.1481	0.1875	0.2397	0.3437	0.3380	0.2088	0.4130	0.2661	0.2159	0.2663
	2018	0.1930	0.2400	0.3578	0.3155	0.3592	0.2281	0.2600	0.2807	0.2400	0.2711
	2019	0.1635	0.2738	0.2690	0.3699	0.3870	0.2454	0.3019	0.2615	0.1848	0.3812
<i>Salmonella</i> I 4,[5],12:i:-	2017	0.1463	0.2564	0.3600	0.3814	0.3014	0.2200	0.3500	0.4634	0.2121	0.4500
	2018	0.1429	0.1379	0.3667	0.3478	0.3478	0.2222	0.2400	0.4000	0.0952	0.4615
	2019	0.1628	0.1765	0.3333	0.2778	0.3673	0.2597	0.2500	0.3125	0.1111	0.4918
<i>Salmonella</i> Javiana	2017	0	0.1667	0.2917	0.3097	0.3107	0.1579	0.3214	0.1667	0.2083	0.2833
	2018	0.1739	0.2143	0.2000	0.3211	0.2364	0.1250	0.1818	0.2353	0.1053	0.3365
	2019	0	0.1667	0.4211	0.3085	0.3111	0.3000	0.2812	0.2857	0.2143	0.3789
<i>Salmonella</i> Newport	2017	0.1562	0.1724	0.4615	0.3249	0.2895	0.2679	0.3396	0.3404	0.2917	0.2651
	2018	0.1094	0.2759	0.3333	0.2727	0.1981	0.1951	0.4176	0.3939	0.2174	0.2700
	2019	0.1026	0.2903	0.3514	0.3371	0.2736	0.1321	0.2653	0.2368	0.1818	0.3269
<i>Salmonella</i> Typhimurium	2017	0.1739	0.2769	0.3710	0.2798	0.3412	0.1735	0.3846	0.3043	0.2090	0.3486
	2018	0.0735	0.1111	0.2958	0.2526	0.4343	0.2946	0.2927	0.2698	0.2533	0.3861
	2019	0.1667	0.1220	0.2667	0.2880	0.3505	0.2933	0.4286	0.3958	0.1935	0.4390
Other <i>Salmonella</i> , non-typhoidal	2017	0.1516	0.2683	0.3448	0.2737	0.2614	0.2494	0.2381	0.2714	0.2367	0.2720
	2018	0.1972	0.2515	0.3389	0.2921	0.2515	0.2398	0.3049	0.2748	0.2110	0.3116
	2019	0.1749	0.2500	0.3190	0.3241	0.3113	0.2071	0.3000	0.2648	0.2238	0.3185
<i>Yersinia</i> , non-pestis	2017	0.6667	0.1250	0.3208	0.5333	0.1429	0.2449	0.2727	0.4074	0.1613	0.3409
	2018	0.3750	0.0857	0.2419	0.3582	0.1525	0.2544	0.2857	0.1739	0.0750	0.2973
	2019	0.5833	0.2571	0.1391	0.2737	0.1648	0.2063	0.3333	0.3846	0.1296	0.3714

*The states of Connecticut, Georgia, Maryland, Minnesota, New Mexico, Oregon, Tennessee, and selected counties in California, Colorado, and New York.

Appendix Table 19. Proportion of laboratory-confirmed illness that resulted in death from Foodborne Diseases Active Surveillance Network (FoodNet) by pathogen, year, and site.

Pathogen	Year	FoodNet site*									
		CA	CO	CT	GA	MD	MN	NM	NY	OR	TN
<i>Campylobacter</i>											
	2017	0.0010	0.0036	0	0.0066	0.0083	0.0039	0.0066	0.0029	0.0009	0.0047
	2018	0.0030	0.0031	0.0013	0.0074	0.0032	0.0019	0.0033	0.0029	0.0021	0.0093
	2019	0.0022	0	0.0028	0.0102	0.0023	0.0007	0.0029	0.0025	0.0010	0.0034
STEC O157											
	2017	0	0.0018	0.0302	0.0046	0	0.0029	0.0489	0	0	0.0139
	2018	0	0.0393	0.0061	0.0016	0	0.0123	0.0147	0.0225	0	0.0144
	2019	0	0.0035	0	0.0325	0	0	0.0425	0.0134	0.0012	0
non-O157 STEC											
	2017	0	0.0052	0	0.0022	0	0.0042	0.0129	0	0	0.0018
	2018	0	0.0047	0.0075	0.0052	0	0.0036	0.0069	0.0081	0	0.0025
	2019	0	0.0035	0	0.0061	0	0	0	0.0047	0.0086	0
<i>Salmonella</i> Enteritidis											
	2017	0	0.0312	0	0.0077	0	0.0040	0	0	0.0114	0.0055
	2018	0.0094	0	0	0.0095	0.0097	0.0070	0	0	0.0098	0
	2019	0	0.0235	0	0.0161	0	0	0	0.0154	0	0.0160
<i>Salmonella</i> I 4,[5],12:-											
	2017	0	0.0769	0	0.0101	0	0	0	0	0	0.0169
	2018	0	0	0	0	0.0638	0.0111	0	0	0	0
	2019	0	0	0	0	0.0208	0	0	0	0	0
<i>Salmonella</i> Javiana											
	2017	0	0	0	0.0032	0	0	0	0	0	0
	2018	0	0	0	0.0063	0	0	0	0	0	0
	2019	0	0	0	0	0	0.0333	0	0	0	0.0100
<i>Salmonella</i> Newport											
	2017	0	0	0	0	0	0.0179	0	0	0	0
	2018	0	0	0	0.0048	0	0	0.0110	0	0	0
	2019	0	0.0312	0	0.0028	0.0091	0	0	0	0	0
<i>Salmonella</i> Typhimurium											
	2017	0	0	0	0	0	0	0	0	0	0.0171
	2018	0.0156	0	0	0.0097	0	0.0179	0	0	0.0133	0.0059
	2019	0.0217	0	0.0333	0.0052	0.0101	0.0133	0	0.0417	0	0.0079
<i>Other Salmonella</i> , non-typhoidal											
	2017	0	0	0.0049	0.0041	0.0033	0.0048	0.0068	0.0151	0.0048	0.0054
	2018	0	0	0.0042	0.0057	0	0	0.0122	0	0.0042	0.0024
	2019	0.0093	0	0.0129	0.0073	0.0078	0.0027	0.0175	0.0046	0.0141	0.0022
<i>Yersinia</i> , non-pestis											
	2017	0	0.0156	0	0	0.0196	0.0102	0	0	0	0
	2018	0.1250	0	0	0.0441	0.0156	0.0088	0	0	0	0.0488
	2019	0	0	0.0084	0	0.0204	0.0079	0	0	0	0

*The states of Connecticut, Georgia, Maryland, Minnesota, New Mexico, Oregon, Tennessee, and selected counties in California, Colorado, and New York

Appendix Table 20. Estimated annual number of illnesses caused by *Campylobacter* spp., *Cryptosporidium* spp., *Listeria monocytogenes*, *Salmonella* (non-typhoidal), Shiga toxin-producing *Escherichia coli*, and *Yersinia enterocolitica* United States, circa 2019

Pathogen	Laboratory-confirmed*	Multipliers		Total		Int'l travel, %	Animal contact, %	Domestically acquired via animal contact	
		Under-reporting	Under-diagnosis	Mean	90% CrI			Mean	90% CrI
<i>Campylobacter</i> spp.	72,218 [†]	1	52.8	4,019,869	1,785,702–7,498,912	19	16	520,832	86,949–1,333,098
<i>Cryptosporidium</i> spp.	8,984 [‡]	1.15	42.3	437,634	334,892–550,615	11	21	82,757	20,491–172,973
<i>Listeria monocytogenes</i> , invasive [#]				1,291	1,112–1,506			14	8–20
NPA	656 [¶]	1	1.7	1,087	941–1,260	3	1	11	7–17
PA, mothers	66 [¶]	1	1.7	110	79–139	3	1	1	1–2
PA, infants	57 [¶]	1	1.7	95	76–126	3	1	1	1–2
<i>Salmonella</i> , NT [#]				2,413,847	1,832,091–3,126,335			249,139	110,141–468,266
Enteritidis	11,240 [†]	1	38.8	479,055	302,325–720,869	22	5	19,333	2,661–59,187
I 4,[5],12:i-	3,721 [†]	1	38.5	159,344	89,236–266,424	10	12	17,153	4,504–39,443
Javiana	4,324 [†]	1	39.2	172,465	46,161–387,390	5	14	22,659	3,272–63,051
Newport	5,906 [†]	1	38.4	260,644	102,989–679,055	7	8	20,159	3,859–53,952
Typhimurium	6,287 [†]	1	39.0	248,881	148,725–384,778	7	13	30,926	8,385–67,175
Other	24,504 [†]	1	39.6	1,093,459	703,336–1,611,006	11	14	138,909	23,667–345,624
STEC [#]				868,744	436,429–1,463,209			134,738	31,457–315,575
O157	5,069 [†]	1	38.9	159,894	66,131–362,008	9	12	17,261	3,573–45,939
Non-O157	15,648 [†]	1	42.7	708,850	323,359–1,234,805	24	22	117,477	18,902–296,123
<i>Yersinia</i> spp.	4,183 [‡]	1	44.1	198,409	71,752–398,256	7	4	7,543	2–29,706
All pathogens [#]				7,939,795	5,467,533–11,501,297			995,022	476,251–1,833,238

CrI, credible interval; STEC, Shiga toxin-producing *Escherichia coli*; Int'l travel, international travel; NPA, non-pregnancy associated; PA, pregnancy associated; NT, non-typhoidal.

Values are reported at the precision of the direct model output and should not be interpreted as reflecting equivalent scientific precision.

*Estimates based on the average U.S. population from 2017–2019.

[†]Active surveillance data from Foodborne Diseases Active Surveillance Network (2017–2019), adjusted for geographic coverage.

[‡]Passive surveillance data from the National Notifiable Diseases Surveillance System (2016–2019).

[¶]Passive surveillance data from the *Listeria* Initiative (2017–2019).

[#]Total number of illnesses and the number of domestically acquired illness through animal contact were the sum of the estimates for corresponding subgroups.

Appendix Table 21. Estimated annual number of hospitalizations and deaths caused by *Campylobacter* spp., *Cryptosporidium* spp., *Listeria monocytogenes*, *Salmonella* (non-typhoidal), Shiga toxin-producing *Escherichia coli*, *Toxoplasma gondii*, and *Yersinia enterocolitica*, United States, circa 2019

Hospitalizations													Deaths			
Pathogen	%	Under-diagnosis multiplier	Total [†]		Domestically Acquired via animal contact [‡]		%	Under-diagnosis multiplier	Total [†]		Domestically Acquired, via animal contact [‡]					
			Mean	90% CrI	Mean	90% CrI			Mean	90% CrI	Mean	90% CrI				
<i>Campylobacter</i> spp.	22.1 [†]	1.7	27,853	12,165–51,110	3,601	619–9,199	0.3 [†]	1.7	420	0–1,178	55	0–184				
<i>Cryptosporidium</i> spp.**	25.2 [‡]	1.5	3,983	3,042–5,080	753	185–1,565	0.7 [‡]	1.5	106	54–180	20	4–49				
<i>Listeria monocytogenes</i> , invasive [#]			1,103	953–1,285	12	7–17		1.7	178	148–210	2	1–3				
NPA	87.4 [¶]	1.7	950	822–1,101	10	6–15	15.8 [¶]	1.7	172	146–202	2	1–3				
PA, mothers	70.4 [¶]	1.7	77	60–94	1	0–1	0 [¶]	1.7	0	0–0	0	0–0				
PA, infants	80.6 [¶]	1.7	77	60–106	1	0–1	5.8 [¶]	1.7	6	0–11	0	0–0				
<i>Salmonella</i> NT [#]			23,492	17,132–31,579	2,415	1,067–4,530			446	15–1,092	46	1–138				
Enteritidis	27.7 [†]	1.5	4,760	2,546–7,854	192	24–606	0.6 [†]	1.5	99	0–383	4	0–21				
I 4,[5],12:i-	28.7 [†]	1.5	1,622	645–2,903	176	35–434	0.7 [†]	1.5	43	0–263	5	0–26				
Javiana	25.2 [†]	1.5	1,655	174–4,821	218	13–719	0.1 [†]	1.5	9	0–56	1	0–6				
Newport	28.0 [†]	1.5	2,498	787–5,689	193	31–525	0.3 [†]	1.5	24	0–166	2	0–12				
Typhimurium	29.3 [†]	1.5	2,800	1,258–4,657	348	77–794	0.8 [†]	1.5	73	0–348	9	0–43				
Other	27.1 [†]	1.5	10,157	6,196–15,745	1,288	213–3,255	0.5 [†]	1.5	197	0–633	25	0–99				
STEC [#]			6,922	3,423–12,243	960	291–2,069			141	0–442	19	0–66				
O157	43.1 [†]	1.5	3,208	1,113–7,572	346	69–951	1.0 [†]	1.5	75	0–321	8	0–39				
non-O157	16.2 [†]	1.5	3,714	1,526–7,653	613	91–1,549	0.3 [†]	1.5	66	0–230	11	0–45				
<i>Toxoplasma gondii</i> **	<0.001	1.5	3,182	2,792–3,562	1,773	939–2,607	<0.001	1.5	163	134–217	91	46–144				
<i>Yersinia</i> spp.	28.5 [†]	1.7	2,098	344–5,213	80	0–327	1.4 [†]	1.7	82	0–378	3	0–11				
All pathogens [#]			68,634	49,762–93,683	9,592	5,603–15,557			1,536	759–2,583	236	119–411				

CrI, credible interval; STEC, Shiga toxin–producing *Escherichia coli*; NPA, non-pregnancy associated; PA, pregnancy associated, NT, non-typhoidal.

Values are reported at the precision of the direct model output and should not be interpreted as reflecting equivalent scientific precision.

[†]Estimates based on the average U.S. population from 2017–2019.

[‡]Percentage hospitalized and died from the Foodborne Diseases Active Surveillance Network (2017–2019)

[§]Percentage hospitalized and died were estimated using hospitalizations and deaths from the National Inpatient Sample (2016–2019) using ICD-10-CM A072 (cryptosporidiosis) compared with illnesses reported to the National Notifiable Diseases Surveillance System (2016–2019).

[¶]Percentage hospitalized and died from the *Listeria* Initiative (2017–2019).

[#]Total number of illnesses and the number of domestically acquired hospitalizations and deaths through animal contact were the sum of the estimates for corresponding subgroups.

^{**}Based on the rates of hospitalizations and deaths from the National Inpatient Sample (2016–2019) applied to the U.S.

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