

Salmonellosis

2010 Case Total	752	2010 Incidence Rate	20.4 per 100,000
2009 Case Total	657	2009 Incidence Rate	17.8 per 100,000

In 2010, salmonellosis increased by 14.5% from the previous year. Of the cases reported, 70 (9%) were epidemiologically linked to confirmed cases during routine case investigations performed by the county health department nurses. Each year a seasonal trend for salmonellosis is noted, with over 50% of cases occurring between July and October, which was again demonstrated in 2010 with 57% of cases reported during that period (n = 428).

Persons with salmonellosis ranged in age from 1 day to 96 years, with a median age of 26 years. The highest age-specific incidence rates (IR) per 100,000 population occurred among children under 10 years of age (IR = 52.1 per 100,000). Eleven deaths were reported to be associated with salmonellosis infection, resulting in a case-fatality rate of 1.5%. The highest proportion of cases occurred in Oklahoma County (18%, n = 132), but based on population size, resulted in an IR of only 18.42 per 100,000. The highest county-specific rate occurred in Harper County with an IR of 118.4 per 100,000 (n = 4). Other counties with high rates for salmonellosis included Alfalfa County (IR = 73 per 100,000, n = 4), Noble County (IR = 54.8 per 100,000, n = 6), Tillman County (IR = 51.3 per 100,000, n = 4), and Coal County (IR = 51.2 per 100,000, n = 3).

Clinical isolates of *Salmonella* species identified by laboratories are required to be submitted to the OSDH Public Health Laboratory (PHL) for confirmation, serotyping, and analysis by pulsed-field gel electrophoresis (PFGE). The OSDH PHL confirmed and serotyped 641 (85%) *Salmonella* isolates of the 752 reported cases in 2010. Fifty-seven different serotypes were identified, with the top four serotypes being Newport (n = 130, 20% of typed isolates), Typhimurium (n = 104, 16%), Enteritidis (n = 53, 8.3%), and Paratyphi B variant L Tartrate + (n = 42, 6.6%).

In fall 2010, a *Salmonella* Paratyphi B variant L Tartrate + outbreak occurred in Canadian Country involving 14 children associated with a local school district. Ten individuals were culture-confirmed cases with indistinguishable PFGE patterns. Investigation indicated eating at the school cafeteria prior to illness onset was associated with illness; however, a specific food item or other source was not identified.

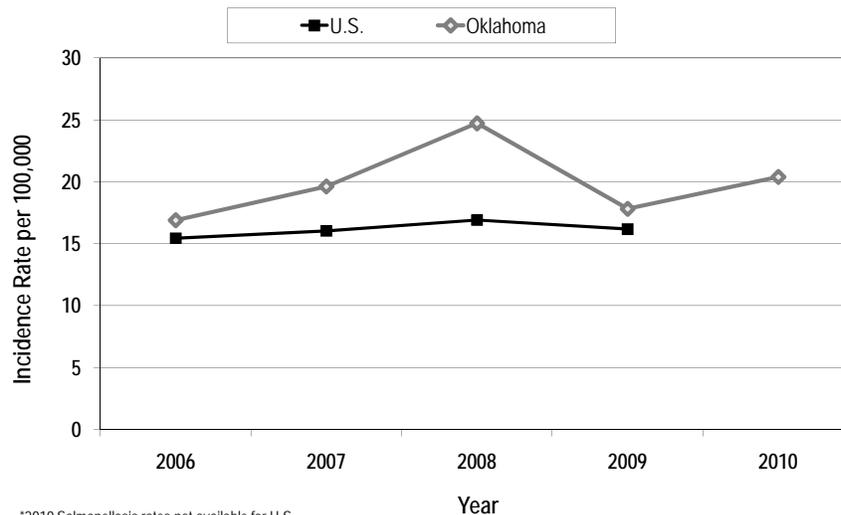
Isolates of salmonellosis are uploaded to a national database for cluster and outbreak identification based upon serogroup and PFGE. In 2010, two multistate outbreaks of salmonellosis involving Oklahoma residents were investigated to determine a potential source of infection. One was a multistate outbreak of *S. Chester* associated with consumption of single-serve frozen entrées; 44 cases from 18 states were identified in this outbreak, including one Oklahoma case. Another multistate outbreak involving Oklahoma residents was due to *S. Enteritidis*; approximately 1,939 cases nationwide were associated with this outbreak, including 7 from Oklahoma. An epidemiologic investigation conducted by state public health officials and CDC determined consumption of shell eggs was associated with development of illness. Results from the public health investigation prompted a traceback investigation by the U.S. Food and Drug Administration (FDA) to determine the common source of these shell eggs. The affected eggs were then recalled, and recommendations for safe food handling were provided to egg producers, retail and food establishments, and the public. Other nationwide outbreaks of Salmonellosis in 2010 without Oklahoma cases include *Salmonella* I 4,[5],12:i:- associated with alfalfa sprouts, *Salmonella* Typhi associated with Frozen Mamey fruit pulp, *Salmonella* I 4,[5],12:i:- associated with frozen rodents, *Salmonella* Newport associated with alfalfa sprouts, and *Salmonella* Typhimurium associated with water frogs.

Demographic and Clinical Summary of Reported Salmonellosis Cases, Oklahoma, 2010 (N = 752)

	Number (%)	Incidence Rate per 100,000
Gender		
Female	394 (52.4%)	21.1
Male	358 (47.6%)	19.7
Age	Median = 26.0 years (range: 1 day – 96 years)	
Race		
White	557 (74%)	19.4
American Indian or Alaska Native	51 (6.8%)	17.2
African American or Black	42 (5.6%)	14.2
Asian	4 (0.5%)	6.4
Native Hawaiian or Other Pacific Islander	1 (0.1%)	25.3
Two or more races	19 (2.5%)	12.6
Unknown	78 (10.4%)	-
Hispanic or Latino Ethnicity		
Hispanic or Latino	56 (7.4%)	18.6
Not Hispanic or Latino	515 (68.5%)	-
Unknown	181 (24.1%)	-
Hospitalized for Salmonellosis (n = 208)*	170 (81.7%)	-
Deaths	11 (1.5%)	-
Exposures (not mutually exclusive)		
Travel outside U.S.	18 (2.4%)	-
Consumed raw or undercooked eggs	68 (9.0%)	-
Consumed raw/unpasteurized milk	4 (0.5%)	-
Consumed raw/unpasteurized cheese	5 (0.7%)	-
Consumed raw/unpasteurized juice	5 (0.7%)	-

*Total number hospitalized

Salmonellosis Incidence Rates by Year, Oklahoma and U.S., 2006 – 2010*



*2010 Salmonellosis rates not available for U.S.