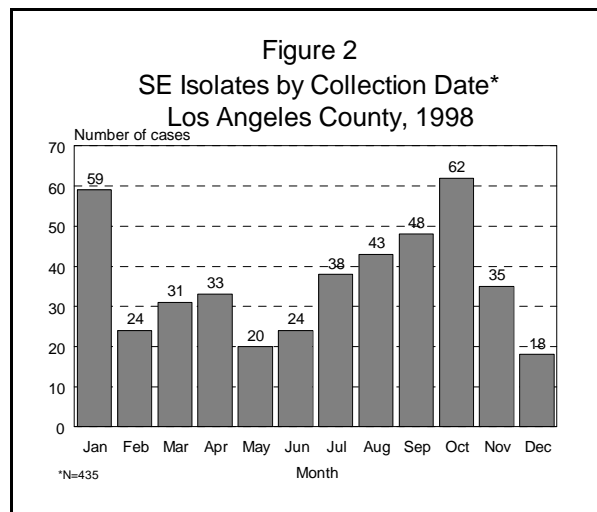
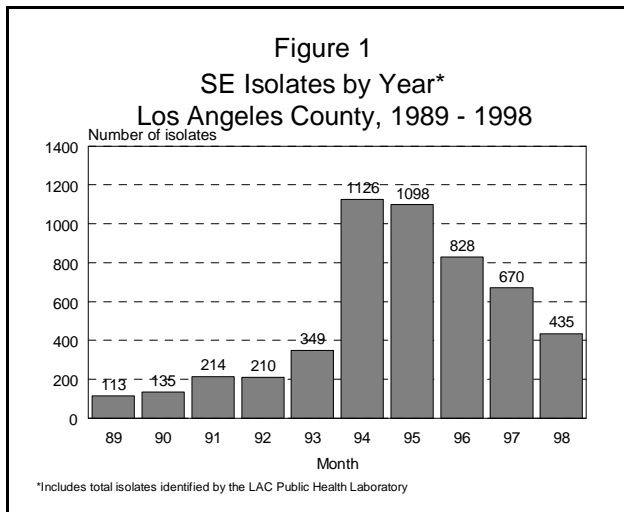


### **SALMONELLA ENTERITIDIS, LOS ANGELES COUNTY, 1998**

Following a marked increase and peak in 1994, human cases of *Salmonella* serotype *enteritidis* (SE) gradually decreased in Los Angeles County (LAC) and in the rest of Southern California. In 1994, a case-control study of sporadic cases was conducted by the Acute Communicable Disease Control Unit and the California Department of Health Services.<sup>1</sup> The study showed a strong association between SE infection and consumption of eggs, especially raw or undercooked eggs. Eating in restaurants also was associated with increased risk of SE infection. The majority of cases occurred in young adults. Since 1994, an increasing proportion of SE cases have occurred in children under five years and the elderly. Almost all of these are phage type 4, indicating that this phage type has become endemic in Los Angeles County.



SE continues to be the major *Salmonella* serotype identified from isolates submitted to the Public Health Laboratory. In 1998, SE comprised 31.9% (439/1377) of *Salmonella* isolates serotyped for LAC cases, an 18% decrease from 1997 when 39% of isolates were SE (Figure 1). The overall rate of SE was 4.3 cases/100,000 population compared to 13.6/100,000 for all *Salmonella*.

The highest frequency of SE cases occurred during the summer and early fall, similar to other *Salmonella* serotypes (Figure 2), and peaked in October when four outbreaks occurred. The majority (88%) of SE isolates were from feces, followed by blood (8%), urine (2%), and other (1.6%). There were 81 hospitalizations, with an average length of hospitalization of 5.2 days. SE infection was a contributing factor in the deaths of three persons with underlying disease.

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In 1998, 15 (68%) of 22 salmonellosis outbreaks were due to SE phage type 4, which is now the most common SE phage type in Southern California (Figure 3). Five of the outbreaks occurred during the hot late summer/early fall, when layer chickens were stressed by the heat and may have shed more *Salmonella* via the ovary into the eggs. Eggs were the suspected source for seven outbreaks, chicken or turkey for four outbreaks, and the source was unknown for four outbreaks (Table 1). Two of the outbreaks occurred in skilled nursing facilities which served undercooked shell eggs, despite recommendations that pasteurized eggs be used in facilities with populations susceptible to invasive infections. There were 22 hospitalizations associated with 1998 SE outbreaks, and one death in a resident of a skilled nursing facility.

**Table 1. *Salmonella enteritidis* Outbreaks in Los Angeles County, 1998**

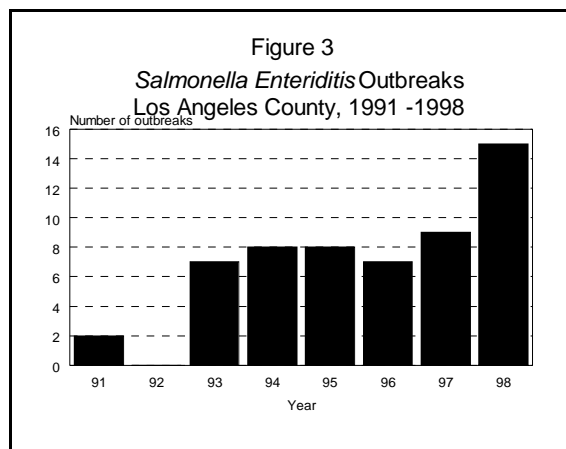
Onset Month	Outbreak Setting	Number Ill	Culture Positive	Phage type	Suspect Vehicle	Suspect Source
January	Home	7	3	4	Macaroni & cheese Turkey	Eggs Turkey
January	Restaurant	5	4	4	Stuffing	Eggs
January	Home	26	9	4	Lasagne	Eggs
February	Restaurant	14	7	4	Chicken enchiladas	Chicken
March	Restaurant	8	6	4	Various dishes	Foodhandlers
March	Home	6	2	4	Ice cream	Eggs
July	Fast food	6	5	4	Hamburgers	Unknown
July	Home	4	2	4	Boiled chicken	Chicken
August	Restaurant	4	2	4	Unknown	Unknown
August	Restaurant	4	1	4	Chicken salad	Chicken
September	Restaurant	6	5	4	Unknown	Unknown
October	Restaurant	13	2	6a	Turkey salad	Turkey
October	SNF	17	8	4	Scrambled eggs	Eggs
October	SNF	4	4	4	Undercooked eggs	Eggs
October	Church	19	3	4	Chile rellenos	Eggs
	15	143	63			

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The Acute Communicable Disease Control Unit continues to monitor sporadic cases and outbreaks of SE and works with private industry groups, and the state and federal government to improve egg production, distribution processes and consumer education that will decrease risk of SE infection.



## REFERENCE

1. Passaro DJ, Reporter R, Mascola L, Kilman L, Malcolm GB, Rolka H, Werner SB, Vugia DJ: Epidemic *Salmonella enteritidis* infection in Los Angeles County, California—The predominance of phage type 4. *West J Med* 1996;165:126-130.