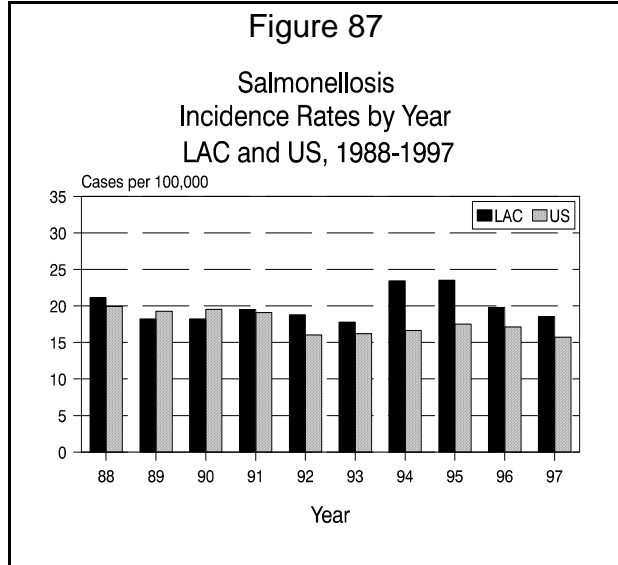


## SALMONELLOSIS

CRUDE DATA	
Number of Cases	1,675
Annual Incidence <sup>a</sup>	
LA County	18.5
California	18.6
United States	15.7
Age at Onset	
Mean	26
Median	23
Range	<1-99 yrs
Case Fatality	
LA County	0.9%
United States	N/A



<sup>a</sup>Cases per 100,000 population.

### ETIOLOGY

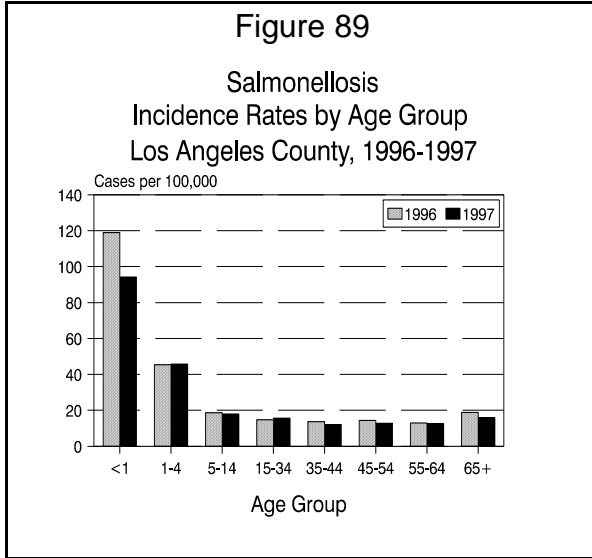
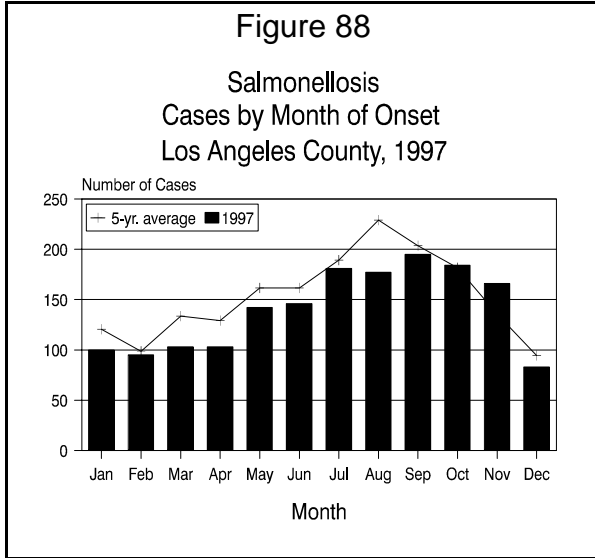
Salmonellosis is caused by *Salmonella* spp. of bacteria, of which there are over 2,500 serotypes.

### DISEASE ABSTRACT

The 1997 salmonellosis crude rate dropped 6.5% compared to 1996. Although *S. enteritidis* (SE) remained the most common isolate (accounting for 39% of all reported *Salmonella* infections), it decreased 13% in 1997. Prior to 1994, *S. typhimurium* was the most common serotype. Table 8 shows the 10 most frequently isolated *Salmonella* serotypes (excluding *S. typhi*) submitted to Los Angeles County (LAC) Department of Health Services' Bacteriology Laboratory in 1997. SE was the predominant serotype and was the etiologic agent identified in 9 of 17 *Salmonella* outbreaks in 1997. One outbreak each was caused by serotypes *heidelberg*, *infantis*, *mbandaka*, *saphra*, *typhimurium* and *typhimurium var. copenhagen*. One outbreak was caused by two serotypes, *montevideo* and *muenchen*.

### STRATIFIED DATA

**Trends:** The incidence of reported salmonellosis cases in 1997 dropped to 18.5 per 100,000 population, a decrease of 6.5%. This represents a return to rates seen in LAC in the early 1990s (Figure 87). Despite a 13% decrease in SE cases in 1997, SE still makes up 39% of all *Salmonella* isolates.



**Seasonality:** In 1997, a peak was seen during late summer/early fall, consistent with the usual seasonal increase in reported cases (Figure 88).

**Age:** As in past years, the highest age-specific rates of infection occurred among infants (94 per 100,000 population) followed by 1-to- 4-year-olds (46 per 100,000) (Figure 89).

**Table 8. Top 10 *Salmonella* Serotypes  
Los Angeles County, 1996-1997**

Serotype	1996 N <sup>a</sup> =1942		1997 N <sup>a</sup> =1949		Change Percent
	No.	Percent	No.	Percent	
<i>S. enteritidis</i>	870	44.8	763	39.0	-13
<i>S. typhimurium</i> <sup>b</sup>	259	13.3	293	15.0	+11
<i>S. heidelberg</i>	95	4.9	124	6.4	+23
<i>S. montevideo</i>	77	4.0	73	3.7	-8
<i>S. infantis</i>	25	1.3	57	2.9	+123
<i>S. oranienberg</i>	40	2.1	44	2.3	+9
<i>S. hadar</i>	33	1.7	43	2.2	+23
<i>S. newport</i>	52	2.7	37	1.9	-30
<i>S. thompson</i>	27	1.4	31	1.6	+13
<i>S. braenderup</i>	27	1.4	30	1.5	+7

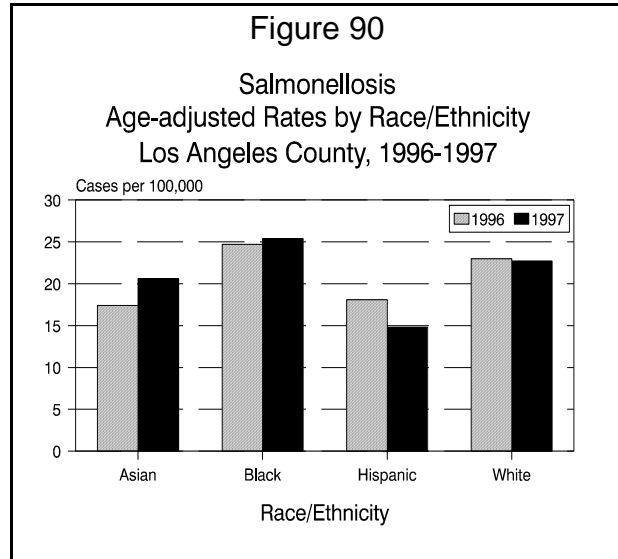
<sup>a</sup>Denominator (N)=total isolates serotyped.

<sup>b</sup>Includes var. *copenhagen* and degraded form.

**Sex:** The male-to-female rate ratio was 1:1.

**Race/Ethnicity:** In 1997, age-adjusted rates rose most in Asians, probably related to two outbreaks in the Asian community and decreased in Hispanics due to the drop in salmonellosis in the less-than-one-year-old age group (Figure 90). The highest rate was in Blacks (25.4 cases per 100,000 population), followed by Whites (22.7), Asians (20.6) and Hispanics (14.8).

**Location:** Torrance Health District had the highest incidence rate (26.5 age-adjusted incidence rate per 100,000 population), followed by South (24.5) and Southwest (22.9). Three outbreaks occurred in the Torrance district in 1997.



## PREVENTION

Each report of salmonellosis is investigated and preventive measures are recommended. Review of investigation reports shows that many persons engage in high-risk food handling behaviors, such as drinking beverages made with raw shell eggs, not washing cutting boards after cutting raw poultry or meat and consumption of raw or undercooked eggs and meats. These investigations demonstrate a need for public education on proper handling and preparation of animal-derived foods, especially eggs, as well as health education targeted at specific racial/ethnic groups. The six commercial food establishment-associated salmonellosis outbreaks reported in 1997 show that health education efforts for foodhandlers also need to be intensified in the commercial food industry.

## COMMENTS

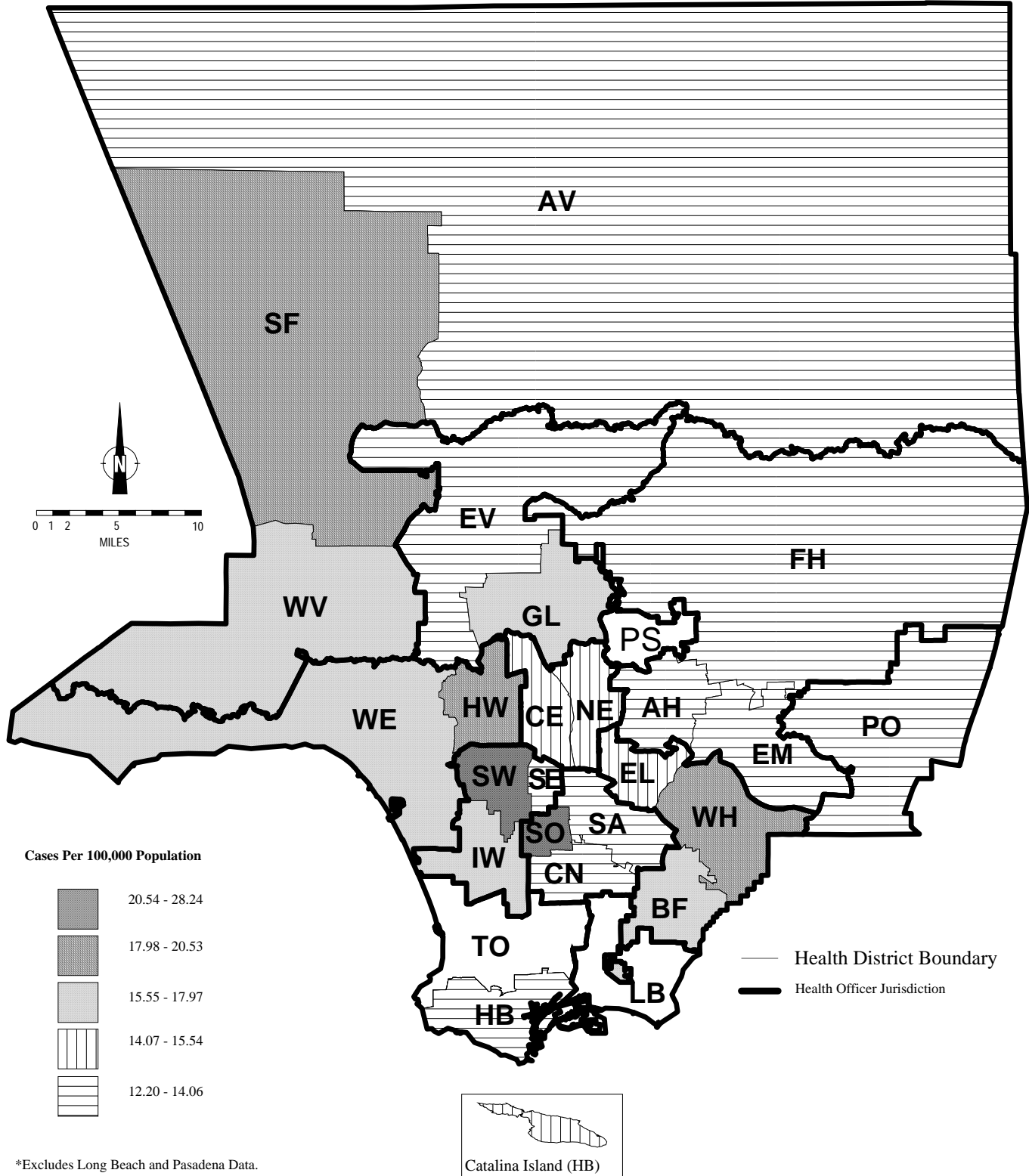
During 1997 there were 17 reported outbreaks of salmonellosis in LAC, up from 11 in 1996 (Table 9). Outbreak-related cases accounted for 6% of all culture-confirmed salmonellosis cases in 1997. SE was the etiologic agent identified in 9 of the 17 outbreaks, similar to the trend since 1994 in which SE has been the agent in the majority of outbreaks. Decreases in sporadic cases of SE infections parallel an overall decrease in SE incidence in Southern California.

**Table 9. Salmonellosis Outbreaks in Los Angeles County, 1997**

<b>Onset Month</b>	<b>Outbreak Setting</b>	<b>Clinical Cases</b>	<b>Culture Positive</b>	<b>Serotype</b>	<b>Suspect Vehicle</b>	<b>Suspect Source</b>
January	Church dinner	14	3	SE	Chicken salad	Unknown
February	Restaurant	7	6	SE	Hollandaise sauce	Shell eggs
March	Restaurant	13	5	SMu,SM	Chicken dishes	Chicken
April	Various	5	5	SS	Cantaloupe	Imported cantaloupe
April	Daycare	5	5	SE	Unknown	Unknown
June	Family dinner	18	6	STC	Pancit malabon	Chicken
July	Group home	8	2	S Mb	Person-to-person	Unknown
July	Daycare	4	4	ST	Person-to-person	Unknown
July	Restaurant	2	2	SE	Battered shrimp	Shell eggs
August	Deli	4	4	SH	Stuffed sole	Unknown
August	Picnic	76	10	SE	Carne asada	Unknown
August	Private home	13	12	SE	Cheesecake	Shell eggs
September	Board & care	2	2	SE	Scrambled eggs	Shell eggs
October	Restaurant	93	15	SB	Unknown	Chicken
November	Private home	60	15	SE	Unknown	Unknown
November	Restaurant	11	3	SI	Guacamole	Unknown
December	Develop. dis. school	2	2	SE	Person-to -person	Unknown
		337	101			

SB = *Salmonella braenderup*  
 SE = *Salmonella enteritidis*  
 SH = *Salmonella heidelberg*  
 SI = *Salmonella infantis*  
 S Mb = *Salmonella mbandaka*  
 SM = *Salmonella montevideo*  
 SMu = *Salmonella muenchen*  
 SS = *Salmonella saphra*  
 ST = *Salmonella typhimurium*  
 STC = *Salmonella typhimurium var. copenhagen*

# MAP 11. Salmonellosis (Age-Adjusted Rate) Rates by Health District, Los Angeles County, 1997\*



\*Excludes Long Beach and Pasadena Data.