County
of
Los Angeles

Department
of
Health
Services

Disease
Control
Programs

Communicable Disease Morbidity Report

Acute Communicable Disease Control Program
HIV Epidemiology Program
Immunization Program
Sexually Transmitted Disease Program
Tuberculosis Control Program

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OVERVIEW

PURPOSE OF THE LOS ANGELES COUNTY ANNUAL COMMUNICABLE DISEASE MORBIDITY REPORT

The annual report of the Los Angeles County Department of Health Services, Disease Control Programs is compiled for the following purposes:

1. To summarize annual communicable disease morbidity in Los Angeles County.
2. To assess the effectiveness of established communicable disease control programs.
3. To identify patterns of disease as an aid in directing future disease prevention efforts.
4. To identify inadequacies in the data used for the above purposes and to identify means of improving the data.

The annual report serves as a communicable disease morbidity resource for medical and public health authorities at county, state, and national levels. County employees, students, the media, and the general public also will find the report useful and informative. A separate ACDC document entitled, "Special Reports, ACDC, 1998," summarizes some of the most interesting or unusual investigations for the year. The following topics are included:

- An Outbreak of *Enterobacter cloacae* Bloodstream infection due to Intrinsically Contaminated Saline Solution
- Epidemiology of Invasive *Streptococcus pneumoniae* Disease, Los Angeles County, 1998
- Epidemiology of Sporadic Nonperinatal Listeriosis: What is the Role of Cancer?
- Evaluation of the Los Angeles County Hepatitis A Surveillance System
- Invasive Group A Streptococcal Surveillance
- Kindergarten and Preschool Immunization Assessment, 1998
- Nosocomial *Ralstonia pickettii* Colonization Associated with Intrinsically Contaminated Saline Solution
- Outbreak of Endotoxin-like Reactions Associated with Single Daily Dosed Intravenous Gentamicin, Los Angeles County, 1998
- Pediatric HIV Disease, Pediatric Spectrum of Disease (PSD)
- *Salmonella enteritidis*, Los Angeles County, 1998
- *Salmonella heidelberg* Associated with a Bakery
- Shigellosis Outbreak Associated with Parsley
- Varicella Active Surveillance Project, 1995-1999
- Varicella Outbreaks After Vaccine Licensure: Problems with Vaccination Coverage, Storage or Efficacy?

LOS ANGELES COUNTY DEMOGRAPHIC DATA

Population figures used for calculating the 1998 disease rates in this report were derived from 1998 population estimation of the Regional Population Model (RPM) file developed by the County of Los Angeles, Chief Administrative Office, Urban Research Division for the Population Estimation and Projection System Consortium. These population estimates were projected from 1990 MARS file (Modified Age, Race, and Sex) produced by the US Census Bureau and modified by local death rates, migration rates, and fertility rates within age, sex and racial/ethnic groups. Live birth data used were based on 1998 preliminary birth data from the Automatic Vital Statistics System (AVSS) obtained from the Los Angeles County Data Collection and Analysis Unit.

Long Beach and Pasadena maintain their own disease reporting systems; therefore, disease

episodes occurring among residents of these two cities have been excluded from county morbidity data, and their populations have been subtracted from county population data. Exceptions to this rule are noted in the text when they occur.

National and California state counts of reportable diseases were obtained from the Centers for Disease Control and Prevention (CDC), Final 1998 Reports of Notifiable Diseases, *Morbidity and Mortality Weekly Report* 1999/48(36);804-5,815-22. The *MMWR* report also includes Bureau of the Census 1998 population estimates for the United States (US) and the State of California; those figures were used to calculate national and California rates of disease. According to that report, the population of the US in 1998 was 270,296,000, and that of California was 32,667,000.

Population estimates for Los Angeles County (minus Pasadena and Long Beach) used in this report are listed in Table A for 1998 as well as for the previous five years. Population data also are given by age, sex, race and health district for 1998 (Tables B-E). Additional disease cases identified after publication of prior annual reports are included in summary tables. Thus, for overall case totals and disease rates from prior years, the current data are considered more accurate than those in prior annual reports.

Table A. Los Angeles County[a] Population by Year, 1993-1998

Year	Population
1993	8,795,536
1994	8,656,560
1995	8,753,853
1996	8,880,054
1997	9,051,337
1998	9,097,041

[a]Cities of Pasadena and Long Beach are excluded from this table.

Table B. Los Angeles County[a] Population by Age Group, 1998

Age Group in Years	Population
<1	146,084
1-4	607,337
5-14	1,321,822
15-34	3,491,161
35-44	1,419,582
45-54	864,649
55-64	609,938
65+	636,468
Total	**9,097,041**

[a]Cities of Pasadena and Long Beach are excluded from this table.

Table C. Los Angeles County[a] Population by Sex, 1998

Sex	Population
Male	4,521,243
Female	4,575,798
Total	**9,097,041**

[a]Cities of Pasadena and Long Beach are excluded from this table.

Table D. Los Angeles County[a] Population by Race, 1998

Race	Population
Asian	1,095,812
Black	791,300
Hispanic	4,137,200
White	3,012,943
Other[b]	59,786
Total	**9,097,041**

[a]Cities of Pasadena and Long Beach are excluded from this table.
[b]Other includes only American Indian, Alaskan Native, Eskimo and Aleut.

Table E. Los Angeles County Population[a] by Health District, 1998

Health District	Population
Alhambra	367,743
Antelope Valley	312,261
Bellflower	357,768
Central	298,202
Compton	282,116
East Los Angeles	219,866
East Valley	438,569
El Monte	469,570
Foothill	309,509
Glendale	334,487
Harbor	200,529
Hollywood-Wilshire	487,923
Inglewood	408,625
Northeast	350,608
Pomona	551,544
San Antonio	434,116
San Fernando	397,424
South	175,607
Southeast	157,413
Southwest	359,187
Torrance	448,527
West	633,846
West Valley	776,625
Whittier	324,976
Total	**9, 097,041**

[a] Pasadena and Long Beach are separate public health jurisdictions and are excluded from this table.

DATA SOURCES

Data on occurrence of communicable diseases in Los Angeles County (LAC) were obtained through passive and/or active surveillance. Passive surveillance relies on physicians, laboratories, and other health-care providers to report diseases of their own accord to the Department of Health Services (DHS) using the Confidential Morbidity Report (CMR) form, the Acquired Immunodeficiency Syndrome (AIDS) Adult Confidential Case Report form, the Sexually Transmitted Disease Confidential Morbidity Report (STD CMR) form, or electronically by telephone or facsimile.

During active surveillance, Disease Control Program or special project staff contact hospitals, laboratories and physicians regularly in an effort to identify all cases of a given disease. In 1998, active surveillance was employed for the following diseases or syndromes:

Acquired Immunodeficiency Syndrome (adult and pediatric cases)
Cryptosporidiosis
Escherichia coli O157:H7
Group A Streptococcal Invasive Disease
Haemophilus influenzae Invasive Disease
Hemolytic Uremic Syndrome
Listeriosis (perinatal and nonperinatal)
Meningococcal Invasive Disease
Pneumococcal Invasive Disease
Streptococcal Necrotizing Fasciitis
Streptococcal Toxic Shock Syndrome

In addition, Disease Control staff contact schools, hospitals, nursing homes, student health centers and sentinel physicians to collect reports of vaccine-preventable diseases and to investigate outbreaks of any kind.

DATA LIMITATIONS

This report should be interpreted in light of the following notable limitations:

1. Problems with cases reporting

The proportion of cases that are not reported varies for each disease. Evidence indicates that the proportion of the cases that are not reported for some diseases may be as high as 95%.

2. Fatality rates

Some deaths from communicable diseases may not appear on LAC's Vital Records computer files. Deaths are filed with only underlying cause of death indicated. Any contributing or otherwise significant conditions, including communicable diseases, are not indicated in the computer record. Also, case-fatality rates (except for acquired immunodeficiency syndrome [AIDS]) are based on deaths that occurred in 1998 regardless of year of disease onset; therefore, fatality rates should be interpreted with caution.

3. Case definitions

To standardize surveillance, "Case Definitions for Infectious Conditions under Public Health

Surveillance," *MMWR* 1997;46(RR-10):1-57 is used. Since verification by a laboratory test is required for the diagnosis of some diseases, cases reported without such verification may not be true cases. Therefore, an association between a communicable disease and a death or an outbreak possibly may not be identified.

4. Onset date versus report date

Some cases of disease occurring in 1998 were not reported until after this annual report was completed. Slight differences in the number of cases and rates of disease for 1998 may be observed in subsequent annual reports. Any such disparities are likely to be small.

5. Population estimates

Estimates of the LAC population are subject to error. Population estimates for the years 1980 and 1990 were obtained from census data. Excluding those years, population data for the years 1981 through 1992 were estimated from 1980 census by simple proportional increases between census years. Population data for 1993 through 1997 were derived from 1990 census using sophisticated estimation techniques. In 1998 population data was estimated using a different technique than previous years. Denominator estimates for past years were not regenerated. These independent population estimates impede trend analysis. Population of LAC is in constant flux. Though not accounted for in census data, visitors and other non-residents may have an effect on disease occurrences.

6. Place of acquisition of infections

Some cases of diseases reported in LAC may have been acquired outside of the county. This may be especially true for many of the diseases common among the Hispanic and Asian populations. Certain disease rates may reflect the place of diagnosis, rather than the location where an infection was acquired.

7. Health District boundary changes

In 1994, the following health district boundaries changed: Central, Compton, Glendale, Inglewood, Northeast, San Fernando, West, and Torrance. San Fernando Health District was split into Antelope Valley and San Fernando Health Districts. These health district boundaries were used for most diseases in the 1998 annual report, with the exception of genital chlamydial infection, gonorrhea, and syphilis. In 1998 the 24 individual health districts were grouped into 8 Service Planning Areas (SPA).

8. Race/Ethnicity category changes

In 1994, the racial group designation of "Other" was separated from the Asian racial group, and is now designated as “Native American” (including American Indian, Alaskan Native, Aleut, and Eskimo). Thus, the five major racial categories and their definitions as used in this report are as follows:

Asian	- A person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
Black	- A person having origins in any of the black racial groups of Africa.
Hispanic	- A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

Native American - A person having origins in any of the original peoples of North America and who maintain cultural identification through tribal affiliation or community recognition.

White - A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

STANDARD REPORT FORMAT

CRUDE DATA

Number of Cases: For most diseases, this number reflects new cases of the disease with an onset in 1998. If the onset was unknown, the date of diagnosis was used. For sexually transmitted diseases and tuberculosis, this number reflects cases reported and confirmed in 1998.

Annual Incidence Rates in Los Angeles County: Number of new cases in 1998 divided by 1998 county population estimate (9,097,041) multiplied by 100,000.

Annual Incidence Rates in the US and California: 1998 incidence rates for the US and California were taken from the previously cited *Morbidity and Mortality Weekly Report*. The *MMWR* records diseases by date of report rather than date of onset.

Mean Age at Onset: Arithmetic average age of all cases.

Median Age at Onset: The age that represents the midpoint of the sequence of all case ages.

Range of Ages at Onset: Ages of the youngest and oldest cases in 1998. For cases under one year of age, less than one (<1) was used.

Case Fatality: Number of deaths in 1998 due to disease (when data were available) divided by the number of new cases of the disease in 1998, expressed as a percentage. Note that deaths may be due to infections acquired prior to 1998.

ETIOLOGY: The causative agent(s).

DISEASE ABSTRACT: A synopsis of the disease activity in 1998.

STRATIFIED DATA

Trends: Any trends in case characteristics during recent years.

Seasonality: Number of cases that occurred during each month of 1998.

Age: Annual rate of disease for individual age groups. Race-adjusted rates are presented for some diseases.

Sex: Male-to-female rate ratio of cases.

Race/Ethnicity: Annual rate of disease for the five major racial groups. Cases of

unknown race are excluded; thus, race-specific rates may be underestimates. Age-adjusted rates are presented for some diseases.

Location: Location presented most often is the health district of residence of cases. Note that "location" rarely refers to the site of disease acquisition. Age-adjusted rates by location are presented for some diseases.

PREVENTION: A description of county programs that address the disease, as well as personal control actions.

COMMENTS: Miscellaneous information not pertaining directly to any of the above items.

CHANGES IN DISEASE INCIDENCE

Incidence rates for several diseases monitored by Disease Control Programs in 1998 were markedly different from those in 1997. The percent change in incidence during 1998 compared to 1997 is presented in Table F for those diseases where at least 10 cases were reported in either 1997 or 1998, and substantial change was observed.

Table F. Percent Change in Incidence of Selected Notifiable Communicable Diseases, Los Angeles County, 1998

Disease	1997	1998	Percent Change
Typhoid fever, carrier	0.01	0.13	1093.97
Pertussis	0.35	0.85	139.42
Meningitis, viral	2.51	4.81	91.98
Kawasaki syndrome	0.22	0.40	79.10
Listeriosis, nonperinatal	0.15	0.26	70.57
Hepatitis C	0.25	0.09	-65.39
Typhus fever	0.14	0.08	-46.42
Mumps	0.43	0.23	-46.42
Hepatitis, unspecified	0.18	0.10	-44.03
Leprosy	0.35	0.21	-40.92

TABLES OF NOTIFIABLE DISEASES

Table G. Reported Cases of Selected Notifiable Diseases by Year of Onset
Los Angeles County, 1993-1998

Disease	Year of Onset						Previous 5-year Average	5-Yr 95% Upper Limit[a]
	1993	1994	1995	1996	1997	1998		
AIDS[b]	3,523	3,317	3,003	2,345	1,787	1,462	2,795	4,203
Amebiasis	290	230	187	215	148	158	214	317
Botulism	1	3	2	4	3	3	3	5
Brucellosis	4	11	3	12	6	2	7	15
Campylobacteriosis	1,385	1,301	1,401	1,736	1,523	1,215	1,469	1,800
Chlamydia[C]	20,521	21,258	18,659	20,191	23,021	24,147	20,730	23,852
Cholera	3	4	2	0	0	2	2	5
Coccidioidomycosis	106	98	76	69	40	41	78	129
Cryptosporidiosis	102	231	211	149	77	93	154	285
Cysticercosis	59	41	26	33	34	22	39	63
Dengue[C]	0	0	2	0	2	6	1	3
E. coli O157:H7	9	13	9	18	20	23	14	24
Encephalitis	59	36	59	33	34	45	44	71
Foodborne outbreaks	7	12	15	12	42	33	18	45
Giardiasis	1,616	1,105	940	971	770	670	1,080	1,712
Gonorrhea	11,080	8,802	7,807	5,723	5,825	5,985	7,847	12,226
Haemophilus influenzae type b	22	20	6	4	10	7	12	28
Hansen's Disease (Leprosy)	24	25	10	9	18	13	17	32
Hepatitis A	1,040	1,193	1,062	1,371	1,480	888	1,229	1,606
Hepatitis B	288	289	231	247	109	92	233	377
Hepatitis C	148	115	205	246	23	8	147	316
Hepatitis unspecified	32	40	22	28	16	9	28	46
Kawasaki syndrome	49	46	39	20	20	36	35	62
Legionellosis	11	11	16	12	32	19	16	34
Listeriosis, nonperinatal	25	26	26	30	14	24	24	36
Listeriosis, perinatal	23	11	10	5	8	7	11	25
Lyme disease	0	2	5	3	4	3	3	7
Malaria	40	40	76	62	55	50	55	85
Measles	51	16	7	2	4	3	16	56
Meningitis, viral	490	250	167	185	227	438	264	520
Meningococcal infections	98	91	52	59	74	50	75	114
Mumps	48	51	42	37	39	21	43	55
Pertussis	104	58	103	120	32	77	83	156
Psittacosis	1	0	0	0	1	0	0	1
Q-fever[C]	0	0	0	0	0	1	0	0
Relapsing fever	1	0	0	0	0	0	0	1
Rheumatic fever, acute	3	5	1	2	1	0	2	6
Rubella	3	4	3	3	5	0	4	5
Salmonellosis	1,565	2,091	2,084	1,773	1,675	1,236	1,838	2,307
Shigellosis	1,532	1,336	1,747	1,130	848	773	1,319	2,002
Strongyloidiasis	42	24	17	11	4	9	20	48
Syphilis (early latent)	1,660	1,024	926	744	648	511	1,000	1,779
Syphilis (prim. & secon.)	511	326	271	216	105	112	286	580
Syphilis (congenital)	257	202	161	126	76	61	164	301
Tetanus	1	0	4	1	4	1	2	6
Trichinosis	0	2	1	0	2	3	1	3
Tuberculosis	1,940	1,794	1,622	1,375	1,347	1,299	1,616	2,122
Tularemia	0	0	1	1	2	0	1	2
Typhoid fever, case	42	38	26	31	26	17	33	47
Typhoid fever, carrier[C]	8	5	6	4	1	12	5	10
Typhus fever	14	8	11	16	13	7	12	18
Vibrio	14	13	12	23	28	29	18	32

[a] [b] The normal distribution assumption may not apply to some rare diseases.
[c] All data are adjusted for report delay and the 1993 AIDS case definition change.
1998 data over 95% upper limit.

Table H. Annual Incidence Rates of Selected Notifiable Diseases by Year of Onset
Los Angeles County, 1993-1998

	Annual Incidence Rate (Cases per 100,000)					
Disease	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
AIDS[a]	40.05	38.31	34.30	26.41	19.74	16.07
Amebiasis	3.30	2.66	2.14	2.42	1.64	1.74
Botulism	0.01	0.03	0.02	0.05	0.03	0.03
Brucellosis	0.05	0.13	0.03	0.14	0.07	0.02
Campylobacteriosis	15.75	15.03	16.00	19.55	16.83	13.36
Chlamydia	233.31	245.57	213.15	227.40	254.30	265.40
Cholera	0.03	0.05	0.02	0.00	0.00	0.02
Coccidioidomycosis	1.21	1.13	0.87	0.78	0.44	0.45
Cryptosporidiosis	1.16	2.67	2.41	1.68	0.85	1.02
Cysticercosis	0.67	0.47	0.30	0.37	0.38	0.24
Dengue	0.00	0.00	0.02	0.00	0.02	0.07
E. coli O157:H7	0.10	0.15	0.10	0.20	0.22	0.25
Encephalitis	0.67	0.42	0.67	0.37	0.38	0.49
Giardiasis	18.37	12.76	10.74	10.93	8.51	7.37
Gonorrhea	125.97	101.68	89.18	64.50	64.40	65.70
Haemophilus influenzae type b	0.25	0.23	0.07	0.05	0.11	0.08
Hansen's disease (Leprosy)	0.27	0.29	0.11	0.10	0.20	0.14
Hepatitis A	11.82	13.78	12.13	14.99	16.35	9.76
Hepatitis B	3.27	3.34	2.64	2.78	1.20	1.01
Hepatitis C	1.68	1.33	2.34	2.77	0.25	0.09
Hepatitis unspecified	0.36	0.46	0.25	0.32	0.18	0.10
Kawasaki syndrome	0.56	0.53	0.45	0.23	0.22	0.40
Legionellosis	0.13	0.13	0.18	0.14	0.35	0.21
Listeriosis, nonperinatal	0.28	0.30	0.30	0.34	0.15	0.26
Listeriosis, perinatal[b]	13.03	6.01	5.81	3.19	5.02	4.19
Lyme disease	0.00	0.02	0.06	0.03	0.04	0.03
Malaria	0.45	0.46	0.87	0.70	0.61	0.55
Measles	0.58	0.18	0.08	0.02	0.04	0.03
Meningitis, viral	5.57	2.89	1.91	2.08	2.51	4.81
Meningococcal infections	1.11	1.05	0.59	0.66	0.82	0.55
Mumps	0.55	0.59	0.48	0.42	0.43	0.23
Pertussis	1.18	0.67	1.18	1.35	0.35	0.85
Psittacosis	0.01	0.00	0.00	0.00	0.01	0.00
Q-fever	0.00	0.00	0.00	0.00	0.00	0.01
Relapsing fever	0.01	0.00	0.00	0.00	0.00	0.00
Rheumatic fever, acute	0.03	0.06	0.01	0.02	0.01	0.00
Rubella	0.03	0.05	0.03	0.03	0.06	0.00
Salmonellosis	17.79	24.16	23.81	19.97	18.51	13.59
Shigellosis	17.42	15.43	19.96	12.73	9.37	8.50
Strongyloidiasis	0.48	0.28	0.19	0.12	0.04	0.10
Syphilis (early latent)	18.87	11.83	10.58	8.40	7.20	5.60
Syphilis (prim. & secon.)	5.81	3.77	3.10	2.40	1.20	1.20
Syphilis (congenital)[b]	145.70	125.60	98.10	76.80	48.10	37.60
Tetanus	0.01	0.00	0.05	0.01	0.04	0.01
Trichinosis	0.00	0.02	0.01	0.00	0.02	0.03
Tuberculosis	22.06	20.72	18.53	15.48	14.88	14.30
Tularemia	0.00	0.00	0.01	0.01	0.02	0.00
Typhoid fever, case	0.48	0.44	0.30	0.35	0.29	0.19
Typhoid fever, carrier	0.09	0.06	0.07	0.05	0.01	0.13
Typhus fever	0.16	0.09	0.13	0.18	0.14	0.08
Vibrio	0.16	0.15	0.14	0.26	0.31	0.32

[a] [b] All data are adjusted for report delay and the 1993 AIDS case definition change.
[b] Rates for perinatal listeriosis and congenital syphilis were calculated as cases per 100,000 live births.

Table I. Five-Year Average of Notifiable Diseases by Month of Onset
Los Angeles County, 1994-1998

Disease	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total[a]
AIDS[b]	221.0	200.0	239.0	214.0	206.0	193.0	197.0	186.0	185.0	183.0	166.0	184.0	2322.0
Amebiasis	16.8	14.0	17.8	16.2	15.8	12.2	18.6	17.8	13.2	15.0	13.2	14.6	185.2
Botulism	0.2	0.2	0.0	0.4	0.4	0.0	0.6	0.2	0.2	0.2	0.0	0.4	2.8
Brucellosis	0.4	0.4	0.2	0.8	0.4	1.0	1.2	0.6	0.0	0.8	0.2	0.4	6.4
Campylobacteriosis	92.0	86.2	86.4	115.0	145.6	159.0	150.8	146.8	139.4	119.0	102.2	83.0	1425.4
Cholera	0.2	0.0	0.2	0.2	0.0	0.2	0.2	0.0	0.2	0.0	0.0	0.2	1.4
Coccidioidomycosis	4.4	7.4	5.0	4.8	4.6	4.4	5.0	3.8	4.6	5.6	5.4	5.4	60.4
Cryptosporidiosis	11.0	9.6	12.4	7.0	9.4	11.2	12.0	11.2	19.2	14.4	9.8	9.8	137.0
Cysticercosis	2.2	2.4	3.4	2.6	2.4	3.2	1.6	2.4	1.6	2.0	2.8	2.0	28.6
Dengue	0.2	0.0	0.0	0.2	0.2	0.8	0.2	0.0	0.2	0.2	0.0	0.0	2.0
E. coli O157:H7	0.8	0.4	0.6	1.0	1.0	1.8	2.8	1.8	1.6	2.4	1.4	0.8	16.4
Encephalitis	2.2	3.4	4.8	3.6	3.8	2.4	1.6	2.2	3.0	2.2	4.4	1.8	35.4
Giardiasis	62.4	57.2	76.4	65.8	72.0	67.6	79.8	101.8	99.4	83.6	58.4	53.4	877.8
Haemophilus influenzae type b	0.0	0.4	0.2	0.0	0.0	0.4	0.2	0.2	0.2	0.0	0.4	0.0	2.0
Hansen's disease (Leprosy)	1.0	0.6	1.4	0.4	0.6	2.0	0.8	1.6	0.4	0.2	1.2	0.6	10.8
Hepatitis A	97.0	86.6	94.2	78.6	83.0	75.8	81.2	107.2	122.4	118.6	109.4	81.2	1135.2
Hepatitis B	22.0	18.6	17.0	20.4	20.4	18.4	19.0	14.8	21.4	17.2	18.6	15.8	223.6
Hepatitis C	12.6	14.2	15.0	18.2	16.2	13.4	17.6	18.8	20.2	20.4	15.8	17.4	199.8
Hepatitis unspecified	2.0	1.2	2.0	2.0	1.4	2.4	1.4	1.0	1.4	1.0	1.0	0.8	17.6
Kawasaki syndrome	3.8	3.4	3.2	2.8	3.0	1.2	2.8	1.4	2.6	2.8	1.8	4.2	33.0
Legionellosis	0.6	1.4	1.6	1.4	0.4	0.4	1.2	1.6	1.4	2.0	3.2	1.4	16.6
Listeriosis, nonperinatal	1.0	2.0	1.0	0.8	1.2	3.2	2.6	4.8	3.0	2.6	1.6	1.0	24.8
Listeriosis, perinatal	0.8	0.4	0.6	1.0	0.8	1.0	0.6	0.6	1.0	0.4	0.6	0.4	8.2
Lyme disease	0.0	0.0	0.2	0.0	0.4	0.0	0.8	0.2	0.4	0.2	0.0	0.0	2.2
Malaria	4.8	3.4	2.4	3.6	6.6	4.6	5.6	8.8	6.0	3.8	3.0	3.2	55.8
Measles	1.2	0.4	0.6	0.8	1.8	0.6	0.8	0.6	0.4	0.4	0.0	0.2	7.8
Meningitis,viral	11.0	11.0	16.8	19.2	25.6	29.6	26.8	29.6	31.8	22.0	15.0	10.0	248.4
Meningococcal infections	12.0	8.4	5.8	5.4	4.4	4.8	3.6	3.8	1.8	2.4	2.4	6.0	60.8
Mumps	5.8	2.8	4.4	4.2	4.8	3.4	1.8	2.2	3.2	2.8	2.0	0.2	37.6
Pertussis	5.4	2.6	5.0	5.8	7.4	7.8	7.6	8.6	8.0	7.2	6.2	3.6	75.2
Psittacosis	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Q-fever	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Relapsing fever	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
Rheumatic fever, acute	0.0	0.2	0.0	0.4	0.2	0.0	0.0	0.2	0.4	0.2	0.0	0.0	1.6
Rubella	0.0	0.0	0.8	0.2	0.2	0.8	0.0	0.2	0.2	0.4	0.2	0.0	3.0
Salmonellosis	104.4	90.6	124.8	121.2	160.6	156.6	182.2	229.2	196.0	172.4	128.4	88.8	1755.2
Shigellosis	66.2	53.0	60.6	58.8	65.8	98.0	142.6	192.4	169.6	120.8	80.6	52.6	1161.0
Strongyloidiasis	0.6	1.0	1.0	2.0	1.0	0.8	1.0	1.8	1.0	1.0	1.0	0.6	12.8
Tetanus	0.4	0.2	0.2	0.4	0.2	0.0	0.2	0.0	0.2	0.0	0.0	0.2	2.0
Trichinosis	0.0	0.2	0.0	0.2	1.2	0.2	0.6	0.0	0.0	0.2	0.0	0.0	2.6
Tularemia	0.0	0.0	0.0	0.0	0.2	0.0	0.4	0.0	0.0	0.2	0.0	0.0	0.8
Typhoid fever, case	1.2	2.0	2.8	1.2	3.4	3.4	3.0	3.0	3.6	1.8	0.6	0.8	26.8
Typhoid fever, carrier	1.4	0.8	0.0	0.2	0.4	0.2	0.4	0.6	0.4	0.8	0.0	0.2	5.4
Typhus fever	0.0	0.4	0.2	0.8	1.2	0.8	1.4	1.0	0.8	1.8	1.2	1.0	10.6
Vibrio	0.4	1.4	0.6	0.6	1.6	3.4	4.0	2.8	2.8	2.0	0.6	0.6	20.8

[a] Chlamydia, gonorrhea, syphilis and tuberculosis were not included because seasonality may not apply to these diseases.

[b] Month of diagnosis is unknown for 54 cases.

Table J. Number of Cases of Selected Notifiable Diseases by Age Group
Los Angeles County, 1998

Disease	<1	1-4	5-14	15-34	35-44	45-54	55-64	65+	Total[a]
AIDS	2	0	1	548	582	229	78	22	1,462
Amebiasis	3	5	21	56	39	20	12	2	158
Botulism	0	0	0	0	2	0	1	0	3
Brucellosis	0	1	1	0	0	0	0	0	2
Campylobacteriosis	63	237	159	320	174	102	74	85	1,215
Chlamydia	40	6	410	21,455	1,457	263	42	51	24,142
Cholera	0	0	0	1	1	0	0	0	2
Coccidioidomycosis	0	0	0	18	5	8	4	6	41
Cryptosporidiosis	2	5	5	26	38	15	1	1	93
Cysticercosis	0	0	1	10	6	3	1	1	22
Dengue	0	0	0	3	1	1	0	1	6
E. coli O157:H7	0	4	4	5	1	1	2	6	23
Encephalitis	3	8	14	4	2	3	3	8	45
Giardiasis	3	144	160	152	98	59	32	22	670
Gonorrhea	8	2	90	4,723	770	196	56	23	5,980
Haemophilus influenzae type b	1	0	1	0	2	0	1	2	7
Hansen's disease (Leprosy)	0	0	0	4	2	2	2	3	13
Hepatitis A	8	80	360	219	106	44	25	46	888
Hepatitis B	0	0	3	45	23	10	8	3	92
Hepatitis C	0	0	0	5	1	1	1	0	8
Hepatitis unspecified	0	0	4	1	3	0	0	1	9
Kawasaki syndrome	10	21	4	0	1	0	0	0	36
Legionellosis	0	0	0	2	1	3	2	11	19
Listeriosis, nonperinatal	0	0	1	1	3	2	1	16	24
Listeriosis, perinatal	0	0	0	7	0	0	0	0	7
Lyme disease	0	0	0	1	0	1	0	1	3
Malaria	1	1	5	18	13	3	6	3	50
Measles	1	0	1	1	0	0	0	0	3
Meningitis, viral	37	25	158	155	36	15	6	6	438
Meningococcal infections	11	7	7	7	4	2	3	9	50
Mumps	0	4	8	5	3	1	0	0	21
Pertussis	55	6	8	3	2	1	2	0	77
Psittacosis	0	0	0	0	0	0	0	0	0
Q-fever	0	0	0	0	1	0	0	0	1
Relapsing fever	0	0	0	0	0	0	0	0	0
Rheumatic fever, acute	0	0	0	0	0	0	0	0	0
Rubella	0	0	0	0	0	0	0	0	0
Salmonellosis	109	201	207	284	155	95	50	135	1,236
Shigellosis	15	206	209	175	81	42	21	24	773
Strongyloidiasis	1	0	1	5	1	0	0	1	9
Syphilis (early latent)	0	0	2	280	147	55	21	4	511
Syphilis (prim. & secon.)	0	0	1	61	32	13	2	2	112
Syphilis (congenital)	61	-	-	-	-	-	-	-	61
Tetanus	0	0	0	0	1	0	0	0	1
Trichinosis	0	0	1	2	0	0	0	0	3
Tuberculosis	3	37	25	345	227	229	144	289	1,299
Tularemia	0	0	0	0	0	0	0	0	0
Typhoid fever, case	0	4	4	5	3	0	0	1	17
Typhoid fever, carrier	0	0	1	3	3	1	0	4	12
Typhus fever	0	0	1	1	1	2	1	0	7
Vibrio	0	1	2	13	4	3	1	5	29

[a]Totals include cases with unknown age.
- Not applicable.

Table K. Incidence Rates of Selected Notifiable Diseases by Age Group
Los Angeles County, 1998

	Age-group Rates (Cases per 100,000)							
Disease	**<1**	**1-4**	**5-14**	**15-34**	**35-44**	**45-54**	**55-64**	**65+**
AIDS	1.36	0.00	0.08	15.70	41.00	26.48	12.79	3.46
Amebiasis	2.05	0.82	1.59	1.60	2.75	2.31	1.97	0.31
Botulism	0.00	0.00	0.00	0.00	0.14	0.00	0.16	0.00
Brucellosis	0.00	0.16	0.08	0.00	0.00	0.00	0.00	0.00
Campylobacteriosis	43.13	39.02	12.03	9.17	12.26	11.80	12.13	13.35
Chlamydia	27.90	1.00	31.60	625.40	104.40	31.00	7.00	8.20
Cholera	0.00	0.00	0.00	0.03	0.07	0.00	0.00	0.00
Coccidioidomycosis	0.00	0.00	0.00	0.52	0.35	0.93	0.66	0.94
Cryptosporidiosis	1.37	0.82	0.38	0.74	2.68	1.73	0.16	0.16
Cysticercosis	0.00	0.00	0.08	0.29	0.42	0.35	0.16	0.16
Dengue	0.00	0.00	0.00	0.09	0.07	0.12	0.00	0.16
E. coli O157:H7	0.00	0.66	0.30	0.14	0.07	0.12	0.33	0.94
Encephalitis	2.05	1.32	1.06	0.11	0.14	0.35	0.49	1.26
Giardiasis	2.05	23.71	12.10	4.35	6.90	6.82	5.25	3.46
Gonorrhea	5.60	0.30	6.90	137.90	55.30	23.10	9.30	3.60
Haemophilus influenzae type b	0.68	0.00	0.08	0.00	0.14	0.00	0.16	0.31
Hansen's disease (Leprosy)	0.00	0.00	0.00	0.11	0.14	0.23	0.33	0.47
Hepatitis A	5.48	13.17	27.24	6.27	7.47	5.09	4.10	7.23
Hepatitis B	0.00	0.00	0.23	1.29	1.62	1.16	1.31	0.47
Hepatitis C	0.00	0.00	0.00	0.14	0.07	0.12	0.16	0.00
Hepatitis unspecified	0.00	0.00	0.30	0.03	0.21	0.00	0.00	0.16
Kawasaki syndrome	6.85	3.46	0.30	0.00	0.07	0.00	0.00	0.00
Legionellosis	0.00	0.00	0.00	0.06	0.07	0.35	0.33	1.73
Listeriosis, nonperinatal	0.00	0.00	0.08	0.03	0.21	0.23	0.16	2.51
Listeriosis, perinatal[a]	0.00	0.00	0.00	5.44	0.00	0.00	0.00	0.00
Lyme disease	0.00	0.00	0.00	0.03	0.00	0.12	0.00	0.16
Malaria	0.68	0.16	0.38	0.52	0.92	0.35	0.98	0.47
Measles	0.68	0.00	0.08	0.03	0.00	0.00	0.00	0.00
Meningitis, viral	25.33	4.12	11.95	4.44	2.54	1.73	0.98	0.94
Meningococcal infections	7.53	1.15	0.53	0.20	0.28	0.23	0.49	1.41
Mumps	0.00	0.66	0.61	0.14	0.21	0.12	0.00	0.00
Pertussis	37.65	0.99	0.60	0.09	0.14	0.12	0.33	0.00
Psittacosis	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Q-fever	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00
Relapsing fever	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rheumatic fever, acute	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rubella	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salmonellosis	74.61	33.10	15.66	8.13	10.92	10.99	8.20	21.21
Shigellosis	10.27	33.92	15.81	5.01	5.71	4.86	3.44	3.77
Strongyloidiasis	0.68	0.00	0.08	0.14	0.07	0.00	0.00	0.16
Syphilis (early latent)	0.00	0.00	0.20	8.10	10.40	6.40	3.50	0.60
Syphilis (prim. & secon.)	0.00	0.00	0.10	1.80	2.30	1.50	0.30	0.30
Syphilis (congenital)	41.80	-	-	-	-	-	-	-
Tetanus	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00
Trichinosis	0.00	0.00	0.08	0.06	0.00	0.00	0.00	0.00
Tuberculosis	2.05	6.09	1.89	9.88	15.99	26.48	23.61	45.41
Tularemia	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Typhoid fever, case	0.00	0.66	0.30	0.14	0.21	0.00	0.00	0.16
Typhoid fever, carrier	0.00	0.00	0.08	0.09	0.21	0.12	0.00	0.63
Typhus fever	0.00	0.00	0.08	0.03	0.07	0.23	0.16	0.00
Vibrio	0.00	0.16	0.15	0.37	0.28	0.35	0.16	0.79

[a]Rates for perinatal listeriosis were calculated as cases per 100,000 live births.
-Not applicable.

Table L. Number of Cases of Selected Notifiable Diseases by Race/Ethnicity Los Angeles County, 1998

Disease	Asian	Black	Hispanic	White	Other	Unknown
AIDS	30	359	648	417	5	3
Amebiasis	9	6	85	47	1	10
Botulism	0	1	2	0	0	0
Brucellosis	0	0	2	0	0	0
Campylobacteriosis	93	39	612	422	10	39
Chlamydia	576	4,445	7,717	1,230	23	10,151
Cholera	0	0	1	0	0	1
Coccidioidomycosis	3	9	13	13	0	3
Cryptosporidiosis	3	4	22	38	0	26
Cysticercosis	0	0	20	1	0	1
Dengue	0	0	4	2	0	0
E. coli O157:H7	2	1	0	17	1	2
Encephalitis	4	3	19	14	1	4
Giardiasis	46	43	328	228	5	20
Gonorrhea	64	2,368	908	523	8	2,109
Haemophilus influenzae type b	1	1	2	3	0	0
Hansen's disease (Leprosy)	5	0	8	0	0	0
Hepatitis A	34	48	550	181	3	72
Hepatitis B	14	17	27	23	0	11
Hepatitis C	0	0	5	2	0	1
Hepatitis unspecified	0	1	4	3	0	1
Kawasaki syndrome	14	4	9	5	1	3
Legionellosis	1	3	2	13	0	0
Listeriosis, nonperinatal	2	2	6	14	0	0
Listeriosis, perinatal	0	0	4	3	0	0
Lyme disease	0	0	0	3	0	0
Malaria	3	15	12	11	2	7
Measles	1	0	0	1	1	0
Meningitis, viral	21	36	222	114	2	43
Meningococcal infections	1	1	27	16	0	5
Mumps	2	1	10	5	0	3
Pertussis	4	11	45	17	0	0
Psittacosis	0	0	0	0	0	0
Q-fever	0	0	1	0	0	0
Relapsing fever	0	0	0	0	0	0
Rheumatic fever, acute	0	0	0	0	0	0
Rubella	0	0	0	0	0	0
Salmonellosis	84	101	563	443	6	39
Shigellosis	17	50	514	175	5	12
Strongyloidiasis	0	1	3	0	0	5
Syphilis (early latent)	4	190	193	37	0	87
Syphilis (prim. & secon.)	2	49	36	14	0	11
Syphilis (congenital)	2	26	29	4	0	61
Tetanus	0	0	0	0	0	1
Trichinosis	1	0	0	0	0	2
Tuberculosis	428	172	560	132	7	0
Tularemia	0	0	0	0	0	0
Typhoid fever, case	4	0	8	0	2	2
Typhoid fever, carrier	0	0	5	1	0	5
Typhus fever	1	0	2	4	0	7
Vibrio	1	0	19	8	0	1

Table M. Incidence Rate of Selected Notifiable Diseases by Race/Ethnicity Los Angeles County, 1998

Disease	Race/Ethnicity Rate (Cases per 100,000)			
	Asian	Black	Hispanic	White
AIDS	2.74	45.37	15.66	13.84
Amebiasis	0.82	0.76	2.05	1.56
Botulism	0.00	0.13	0.05	0.00
Brucellosis	0.00	0.00	0.05	0.00
Campylobacteriosis	8.49	4.93	14.79	14.01
Chlamydia	90.70	969.30	321.90	70.40
Cholera	0.00	0.00	0.02	0.00
Coccidioidomycosis	0.27	1.14	0.31	0.43
Cryptosporidiosis	0.27	0.51	0.53	1.26
Cysticercosis	0.00	0.00	0.48	0.03
Dengue	0.00	0.00	0.10	0.07
E. coli O157:H7	0.18	0.13	0.00	0.56
Encephalitis	0.37	0.38	0.46	0.46
Giardiasis	4.20	5.43	7.93	7.57
Gonorrhea	9.00	462.30	33.90	26.80
Haemophilus influenzae type b	0.09	0.13	0.05	0.10
Hansen's Disease (Leprosy)	0.46	0.00	0.19	0.00
Hepatitis A	3.10	6.07	13.29	6.01
Hepatitis B	1.28	2.15	0.65	0.76
Hepatitis C	0.00	0.00	0.12	0.07
Hepatitis unspecified	0.00	0.13	0.10	0.10
Kawasaki syndrome	1.28	0.51	0.22	0.17
Legionellosis	0.09	0.38	0.05	0.43
Listeriosis, nonperinatal	0.18	0.25	0.15	0.47
Listeriosis, perinatal[a]	0.00	0.00	4.11	9.79
Lyme Disease	0.00	0.00	0.00	0.10
Malaria	0.27	1.90	0.29	0.37
Measles	0.09	0.00	0.00	0.03
Meningitis, viral	1.92	4.55	5.37	3.78
Meningococcal infections	0.09	0.13	0.65	0.53
Mumps	0.18	0.13	0.24	0.17
Pertussis	0.37	1.39	1.09	0.56
Psittacosis	0.00	0.00	0.00	0.00
Q-fever	0.00	0.00	0.02	0.00
Relapsing fever	0.00	0.00	0.00	0.00
Rheumatic fever, acute	0.00	0.00	0.00	0.00
Rubella	0.00	0.00	0.00	0.00
Salmonellosis	7.67	12.76	13.61	14.70
Shigellosis	1.55	6.32	12.42	5.81
Strongyloidiasis	0.00	0.13	0.07	0.00
Syphilis (early latent)	0.40	24.00	4.70	1.20
Syphilis (prim. & secon.)	0.20	6.90	1.00	0.50
Syphilis (congenital)[a]	14.70	212.70	31.50	14.70
Tetanus	0.00	0.00	0.00	0.00
Trichinosis	0.09	0.00	0.00	0.00
Tuberculosis	39.06	21.74	13.54	4.38
Tularemia	0.00	0.00	0.00	0.00
Typhoid fever, case	0.73	0.00	0.22	0.00
Typhoid fever, carrier	0.18	0.00	0.24	0.00
Typhus fever	0.09	0.00	0.05	0.13
Vibrio	0.09	0.00	0.46	0.27

[a] Rates for perinatal listeriosis and congenital syphilis were calculated as cases per 100,000 live births.

Table N. Number of Cases and Annual Incidence Rate of Selected Notifiable Diseases by Sex Los Angeles County, 1998

Disease	Male		Female	
	Cases	Rate (Cases per 100,000)	Cases	Rate (Cases per 100,000)
AIDS	1,300	28.75	162	3.54
Amebiasis	98	2.17	59	1.29
Botulism	3	0.07	0	0.00
Brucellosis	1	0.02	1	0.02
Campylobacteriosis	678	15.00	531	11.60
Chlamydia	5,178	115.50	18,759	413.50
Cholera	1	0.02	1	0.02
Coccidioidomycosis	33	0.73	8	0.17
Cryptosporidiosis	67	1.48	25	0.55
Cysticercosis	10	0.22	11	0.24
Dengue	2	0.04	4	0.09
E. coli O157:H7	11	0.24	12	0.26
Encephalitis	24	0.53	18	0.39
Giardiasis	391	8.65	277	6.05
Gonorrhea	3,178	70.60	2,778	61.00
Haemophilus influenzae type b	5	0.11	2	0.04
Hansen's disease (Leprosy)	9	0.20	4	0.09
Hepatitis A	487	10.77	398	8.70
Hepatitis B	72	1.59	20	0.44
Hepatitis C	8	0.18	0	0.00
Hepatitis unspecified	3	0.07	6	0.13
Kawasaki syndrome	20	0.44	13	0.28
Legionellosis	8	0.18	11	0.24
Listeriosis, nonperinatal	13	0.29	11	0.24
Listeriosis, perinatal[a]	1	1.18	3	3.65
Lyme disease	2	0.04	1	0.02
Malaria	34	0.75	15	0.33
Measles	1	0.02	2	0.04
Meningitis, viral	226	5.00	209	4.57
Meningococcal infections	22	0.49	27	0.59
Mumps	14	0.31	7	0.15
Pertussis	33	0.73	44	0.96
Psittacosis	0	0.00	0	0.00
Q-fever	1	0.02	0	0.00
Relapsing fever	0	0.00	0	0.00
Rheumatic fever, acute	0	0.00	0	0.00
Rubella	0	0.00	0	0.00
Salmonellosis	633	14.00	603	13.18
Shigellosis	366	8.10	406	8.87
Strongyloidiasis	4	0.09	4	0.09
Syphilis (early latent)	274	6.10	235	5.10
Syphilis (prim. & secon.)	67	1.50	45	1.00
Syphilis (congenital)	N/A	N/A	N/A	N/A
Tetanus	0	0.00	1	0.02
Trichinosis	2	0.04	0	0.00
Tuberculosis	831	18.38	468	10.23
Tularemia	0	0.00	0	0.00
Typhoid fever, case	8	0.18	9	0.20
Typhoid fever, carrier	2	0.04	10	0.22
Typhus fever	4	0.09	3	0.07
Vibrio	20	0.44	9	0.20

[a] Rates for perinatal listeriosis were calculated as cases per 100,000 live births.

Table O-1. Selected Notifiable Diseases
SPA 1. Antelope Valley Area
Los Angeles County, 1998

Disease	Frequency	Rate (Cases per 100,000)
	Antelope	Antelope
AIDS	19	6.08
Amebiasis	3	0.96
Botulism	0	0.00
Brucellosis	0	0.00
Campylobacteriosis	30	9.61
Chlamydia[a]	N/A	N/A
Cholera	0	0.00
Coccidioidomycosis	4	1.28
Cryptosporidiosis	0	0.00
Cysticercosis	1	0.32
Dengue	0	0.00
E. coli O157:H7	2	0.64
Encephalitis	1	0.32
Giardiasis	23	7.37
Gonorrhea[a]	N/A	N/A
Haemophilus influenzae type b	0	0.00
Hansen's disease (Leprosy)	0	0.00
Hepatitis A	13	4.16
Hepatitis B	0	0.00
Hepatitis C	5	1.60
Hepatitis unspecified	0	0.00
Kawasaki syndrome	0	0.00
Legionellosis	1	0.32
Listeriosis, nonperinatal	0	0.00
Listeriosis, perinatal[b]	0	0.00
Lyme disease	0	0.00
Malaria	1	0.32
Measles	0	0.00
Meningitis, viral	3	0.96
Meningococcal infections	2	0.64
Mumps	0	0.00
Pertussis	4	1.28
Psittacosis	0	0.00
Q-fever	0	0.00
Relapsing fever	0	0.00
Rheumatic fever, acute	0	0.00
Rubella	0	0.00
Salmonellosis	50	16.01
Shigellosis	10	3.20
Strongyloidiasis	0	0.00
Syphilis (early latent)[a]	N/A	N/A
Syphilis (prim. & secon.)[a]	N/A	N/A
Syphilis (congenital)[a]	N/A	N/A
Tetanus	0	0.00
Trichinosis	0	0.00
Tuberculosis	15	4.80
Tularemia	0	0.00
Typhoid fever, case	0	0.00
Typhoid fever, carrier	0	0.00
Typhus fever	0	0.00
Vibrio	0	0.00

[a] Data for Antelope Valley Health District were included in San Fernando Health District.
[b] Rates for perinatal listeriosis were calculated as cases per 100,000 women aged 15 to 44 years.

Table O-2. Selected Notifiable Diseases
SPA 2. San Fernando Area
Los Angeles County, 1998

Disease	Frequency				Rate (Cases per 100,000)			
	E Valley	Glendale	San Fern	W Valley	E Valley	Glendale	San Fern	W Valley
AIDS	88	27	19	100	20.06	8.07	4.78	12.88
Amebiasis	16	7	2	10	3.65	2.09	0.50	1.29
Botulism	0	0	0	0	0.00	0.00	0.00	0.00
Brucellosis	0	0	0	1	0.00	0.00	0.00	0.13
Campylobacteriosis	48	48	67	75	10.94	14.35	16.36	9.66
Chlamydia	907	291	990	1,240	252.20	106.10	170.10	194.70
Cholera	0	1	0	1	0.00	0.30	0.00	0.13
Coccidioidomycosis	2	1	4	7	0.46	0.30	1.01	0.90
Cryptosporidiosis	7	4	3	11	1.60	1.20	0.75	1.42
Cysticercosis	3	1	1	1	0.68	0.30	0.25	0.13
Dengue	0	0	0	2	0.00	0.00	0.00	0.26
E. coli O157:H7	1	2	0	3	0.23	0.60	0.00	0.39
Encephalitis	3	3	3	4	0.68	0.90	0.75	0.52
Giardiasis	36	13	30	69	8.21	3.89	7.55	8.88
Gonorrhea	153	57	212	216	42.10	20.60	29.90	33.60
Haemophilus influenzae type b	0	0	0	0	0.00	0.00	0.00	0.00
Hansen's disease (Leprosy)	0	0	0	2	0.00	0.00	0.00	0.26
Hepatitis A	43	11	19	41	9.80	3.29	4.78	5.28
Hepatitis B	5	8	0	4	1.14	2.39	0.00	0.52
Hepatitis C	0	0	0	0	0.00	0.00	0.00	0.00
Hepatitis unspecified	0	1	0	0	0.00	0.30	0.00	0.00
Kawasaki syndrome	2	3	0	3	0.46	0.90	0.00	0.39
Legionellosis	0	0	1	2	0.00	0.00	0.25	0.26
Listeriosis, nonperinatal	1	4	0	2	0.23	1.20	0.00	0.26
Listeriosis, perinatal[a]	1	0	0	1	0.42	0.00	0.00	0.24
Lyme disease	0	0	0	0	0.00	0.00	0.00	0.00
Malaria	2	3	0	6	0.46	0.90	0.00	0.77
Measles	0	0	0	0	0.00	0.00	0.00	0.00
Meningitis, viral	8	10	13	21	1.82	2.99	3.27	2.70
Meningococcal infections	2	1	3	4	0.46	0.30	0.75	0.52
Mumps	1	0	3	1	0.23	0.00	0.75	0.13
Pertussis	2	4	8	4	0.46	1.20	2.01	0.52
Psittacosis	0	0	0	0	0.00	0.00	0.00	0.00
Q-fever	0	0	0	0	0.00	0.00	0.00	0.00
Relapsing fever	0	0	0	0	0.00	0.00	0.00	0.00
Rheumatic fever, acute	0	0	0	0	0.00	0.00	0.00	0.00
Rubella	0	0	0	0	0.00	0.00	0.00	0.00
Salmonellosis	48	33	50	98	10.94	9.87	12.58	12.62
Shigellosis	43	16	17	60	9.80	4.78	4.28	7.73
Strongyloidiasis	0	0	0	0	0.00	0.00	0.00	0.00
Syphilis (early latent)[b]	12	10	12	15	2.70	3.00	1.70	1.90
Syphilis (prim. & secon.)[b]	3	4	2	4	0.70	1.20	0.30	0.50
Syphilis (congenital)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetanus	0	0	0	0	0.00	0.00	0.00	0.00
Trichinosis	0	0	0	0	0.00	0.00	0.00	0.00
Tuberculosis	58	31	31	72	13.22	9.27	7.80	9.27
Tularemia	0	0	0	0	0.00	0.00	0.00	0.00
Typhoid fever, case	1	2	1	3	0.23	0.60	0.25	0.39
Typhoid fever, carrier	0	1	0	2	0.00	0.30	0.00	0.26
Typhus fever	0	0	0	0	0.00	0.00	0.00	0.00
Vibrio	0	0	4	1	0.00	0.00	1.01	0.13

[a] Rates for perinatal listeriosis were calculated as cases per 100,000 women aged 15 to 44 years.
[b] San Fernando rate includes Antelope Valley.

Table O-3. Selected Notifiable Diseases
SPA 3. San Gabriel Area
Los Angeles County, 1998

Disease	Frequency				Rate (Cases per 100,000)			
	Alhambra	El Monte	Foothill	Pomona	Alhambra	El Monte	Foothill	Pomona
AIDS	16	38	17	32	4.35	8.09	5.49	5.80
Amebiasis	5	3	5	9	1.36	0.64	1.62	1.63
Botulism	0	2	0	0	0.00	0.43	0.00	0.00
Brucellosis	0	0	0	0	0.00	0.00	0.00	0.00
Campylobacteriosis	32	54	25	63	8.70	11.50	8.08	11.42
Chlamydia	391	850	413	745	129.70	220.70	162.70	164.70
Cholera	0	0	0	0	0.00	0.00	0.00	0.00
Coccidioidomycosis	0	0	0	0	0.00	0.00	0.00	0.00
Cryptosporidiosis	0	1	2	1	0.00	0.21	0.65	0.18
0.32Cysticercosis	0	1	1	1	0.00	0.21	0.32	0.18
Dengue	0	0	0	0	0.00	0.00	0.00	0.00
E. coli O157:H7	0	0	1	3	0.00	0.00	0.32	0.54
Encephalitis	4	2	3	2	1.09	0.43	0.97	0.36
Giardiasis	16	76	23	22	4.35	16.19	7.43	3.99
Gonorrhea	38	76	64	116	12.50	19.50	25.00	25.40
Haemophilus influenzae type b	1	0	0	0	0.27	0.00	0.00	0.00
Hansen's disease (Leprosy)	0	1	1	0	0.00	0.21	0.32	0.00
Hepatitis A	18	61	21	25	4.89	12.99	6.78	4.53
Hepatitis B	2	5	0	3	0.54	1.06	0.00	0.54
Hepatitis C	0	0	0	0	0.00	0.00	0.00	0.00
Hepatitis unspecified	0	0	1	0	0.00	0.00	0.32	0.00
Kawasaki syndrome	2	2	1	0	0.54	0.43	0.32	0.00
Legionellosis	0	0	0	0	0.00	0.00	0.00	0.00
Listeriosis, nonperinatal	1	2	0	1	0.27	0.43	0.00	0.18
Listeriosis, perinatal[a]	0	0	0	0	0.00	0.00	0.00	0.00
Lyme disease	0	0	0	0	0.00	0.00	0.00	0.00
Malaria	0	2	1	0	0.00	0.43	0.32	0.00
Measles	0	0	0	0	0.00	0.00	0.00	0.00
Meningitis, viral	13	36	30	35	3.54	7.67	9.69	6.35
Meningococcal infections	2	2	0	2	0.54	0.43	0.00	0.36
Mumps	0	2	2	1	0.00	0.43	0.65	0.18
Pertussis	2	3	3	2	0.54	0.64	0.97	0.36
Psittacosis	0	0	0	0	0.00	0.00	0.00	0.00
Q-fever	0	0	0	0	0.00	0.00	0.00	0.00
Relapsing fever	0	0	0	0	0.00	0.00	0.00	0.00
Rheumatic fever, acute	0	0	0	0	0.00	0.00	0.00	0.00
Rubella	0	0	0	0	0.00	0.00	0.00	0.00
Salmonellosis	51	59	48	60	13.87	12.56	15.51	10.88
Shigellosis	16	46	17	18	4.35	9.80	5.49	3.26
Strongyloidiasis	0	0	0	0	0.00	0.00	0.00	0.00
Syphilis (early latent)	3	12	13	16	0.80	2.60	4.20	2.90
Syphilis (prim. & secon.)	1	1	3	0	0.30	0.20	1.00	0.00
Syphilis (congenital)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetanus	0	0	0	0	0.00	0.00	0.00	0.00
Trichinosis	0	0	0	0	0.00	0.00	0.00	0.00
Tuberculosis	100	69	28	63	27.19	14.69	9.05	11.42
Tularemia	0	0	0	0	0.00	0.00	0.00	0.00
Typhoid fever, case	0	0	0	1	0.00	0.00	0.00	0.18
Typhoid fever, carrier	0	0	0	0	0.00	0.00	0.00	0.00
Typhus fever	0	0	1	0	0.00	0.00	0.32	0.00
Vibrio	0	0	0	2	0.00	0.00	0.00	0.36

[a]Rates for perinatal listeriosis were calculated as cases per 100,000 women aged 15 to 44 years.

Table O-4. Selected Notifiable Diseases
SPA 4. Metro Area
Los Angeles County, 1998

Disease	Frequency			Rate (Cases per 100,000)		
	Central	Hol-Wil	NE	Central	Hol-Wil	NE
AIDS	204	303	50	68.41	62.10	14.26
Amebiasis	13	20	9	4.36	4.10	2.57
Botulism	0	0	0	0.00	0.00	0.00
Brucellosis	0	0	0	0.00	0.00	0.00
Campylobacteriosis	29	64	69	9.72	13.12	19.68
Chlamydia	1,028	1,271	813	420.40	317.60	282.80
Cholera	0	0	0	0.00	0.00	0.00
Coccidioidomycosis	3	1	4	1.01	0.20	1.14
Cryptosporidiosis	6	28	1	2.01	5.74	0.29
Cysticercosis	0	2	1	0.00	0.41	0.29
Dengue	0	0	1	0.00	0.00	0.29
E. coli O157:H7	0	3	0	0.00	0.61	0.00
Encephalitis	1	0	3	0.34	0.00	0.86
Giardiasis	18	49	17	6.04	10.04	4.85
Gonorrhea	242	578	106	98.00	143.10	36.50
Haemophilus influenzae type b	0	0	0	0.00	0.00	0.00
Hansen's disease (Leprosy)	3	2	0	1.01	0.41	0.00
Hepatitis A	32	68	52	10.73	13.94	14.83
Hepatitis B	6	22	4	2.01	4.51	1.14
Hepatitis C	0	0	0	0.00	0.00	0.00
Hepatitis unspecified	0	0	1	0.00	0.00	0.29
Kawasaki syndrome	0	3	0	0.00	0.61	0.00
Legionellosis	1	5	0	0.34	1.02	0.00
Listeriosis, nonperinatal	0	2	1	0.00	0.41	0.29
Listeriosis, perinatal[a]	0	1	0	0.00	0.36	0.00
Lyme disease	0	0	0	0.00	0.00	0.00
Malaria	2	7	0	0.67	1.43	0.00
Measles	0	0	0	0.00	0.00	0.00
Meningitis, viral	8	16	7	2.68	3.28	2.00
Meningococcal infections	4	3	2	1.34	0.61	0.57
Mumps	1	1	2	0.34	0.20	0.57
Pertussis	2	4	2	0.67	0.82	0.57
Psittacosis	0	0	0	0.00	0.00	0.00
Q-fever	0	0	0	0.00	0.00	0.00
Relapsing fever	0	0	0	0.00	0.00	0.00
Rheumatic fever, acute	0	0	0	0.00	0.00	0.00
Rubella	0	0	0	0.00	0.00	0.00
Salmonellosis	31	73	45	10.40	14.96	12.83
Shigellosis	33	81	54	11.07	16.60	15.40
Strongyloidiasis	0	5	1	0.00	1.02	0.29
Syphilis (early latent)	59	45	13	19.90	9.30	3.70
Syphilis (prim. & secon.)	15	10	4	5.00	2.00	1.10
Syphilis (congenital)	N/A	N/A	N/A	N/A	N/A	N/A
Tetanus	0	0	0	0.00	0.00	0.00
Trichinosis	0	2	0	0.00	0.41	0.00
Tuberculosis	142	129	58	47.62	26.44	16.54
Tularemia	0	0	0	0.00	0.00	0.00
Typhoid fever, case	1	1	0	0.34	0.20	0.00
Typhoid fever, carrier	3	2	0	1.01	0.41	0.00
Typhus fever	3	1	1	1.01	0.20	0.29
Vibrio	0	1	2	0.00	0.20	0.57

[a]Rates for perinatal listeriosis were calculated as cases per 100,000 women aged 15 to 44 years.

Table O-5. Selected Notifiable Diseases
SPA 5. West Area
Los Angeles County, 1998

Disease	Frequency	Rate (Cases per 100,000)
	West	West
AIDS	64	10.10
Amebiasis	12	1.89
Botulism	0	0.00
Brucellosis	0	0.00
Campylobacteriosis	103	16.25
Chlamydia	771	148.30
Cholera	0	0.00
Coccidioidomycosis	2	0.32
Cryptosporidiosis	13	2.05
Cysticercosis	1	0.16
Dengue	0	0.00
E. coli O157:H7	2	0.32
Encephalitis	0	0.00
Giardiasis	43	6.78
Gonorrhea	194	37.00
Haemophilus influenzae type b	0	0.00
Hansen's disease (Leprosy)	0	0.00
Hepatitis A	26	4.10
Hepatitis B	1	0.16
Hepatitis C	0	0.00
Hepatitis unspecified	0	0.00
Kawasaki syndrome	1	0.16
Legionellosis	3	0.47
Listeriosis, nonperinatal	5	0.79
Listeriosis, perinatal[a]	1	0.28
Lyme disease	2	0.32
Malaria	1	0.16
Measles	1	0.16
Meningitis, viral	3	0.47
Meningococcal infections	0	0.00
Mumps	0	0.00
Pertussis	4	0.63
Psittacosis	0	0.00
Q-fever	0	0.00
Relapsing fever	0	0.00
Rheumatic fever, acute	0	0.00
Rubella	0	0.00
Salmonellosis	75	11.83
Shigellosis	36	5.68
Strongyloidiasis	0	0.00
Syphilis (early latent)	6	1.00
Syphilis (prim. & secon.)	2	0.30
Syphilis (congenital)	N/A	N/A
Tetanus	0	0.00
Trichinosis	0	0.00
Tuberculosis	49	7.73
Tularemia	0	0.00
Typhoid fever, case	0	0.00
Typhoid fever, carrier	0	0.00
Typhus fever	0	0.00
Vibrio	5	0.79

[a]Rates for perinatal listeriosis were calculated as cases per 100,000 women aged 15 to 44 years.

Table O-6. Selected Notifiable Diseases
SPA 6. South Area
Los Angeles County, 1998

Disease	Frequency				Rate (Cases per 100,000)			
	Comp	South	SE	SW	Comp	South	SE	SW
AIDS	30	23	40	84	10.63	13.10	25.41	23.39
Amebiasis	1	0	6	3	0.35	0.00	3.81	0.84
Botulism	0	0	0	1	0.00	0.00	0.00	0.28
Brucellosis	0	0	0	0	0.00	0.00	0.00	0.00
Campylobacteriosis	29	17	31	36	10.63	9.68	19.69	10.02
Chlamydia	1,199	1,022	733	1,988	518.30	709.70	567.80	674.90
Cholera	0	0	0	0	0.00	0.00	0.00	0.00
Coccidioidomycosis	0	1	0	1	0.00	0.57	0.00	0.28
Cryptosporidiosis	0	0	0	0	0.00	0.00	0.00	0.00
Cysticercosis	1	0	0	1	0.35	0.00	0.00	0.28
Dengue	0	0	0	0	0.00	0.00	0.00	0.00
E. coli O157:H7	0	0	0	0	0.00	0.00	0.00	0.00
Encephalitis	1	0	1	2	0.35	0.00	0.64	0.56
Giardiasis	18	5	11	19	6.38	2.85	6.99	5.29
Gonorrhea	421	386	174	692	180.20	265.40	133.50	232.70
Haemophilus influenzae type b	1	0	0	0	0.35	0.00	0.00	0.00
Hansen's disease (Leprosy)	0	0	1	0	0.00	0.00	0.64	0.00
Hepatitis A	31	21	48	20	10.99	11.96	30.49	5.57
Hepatitis B	3	4	0	0	1.06	2.28	0.00	0.00
Hepatitis C	0	0	0	0	0.00	0.00	0.00	0.00
Hepatitis unspecified	0	0	0	1	0.00	0.00	0.00	0.28
Kawasaki syndrome	0	0	0	1	0.00	0.00	0.00	0.28
Legionellosis	0	0	0	1	0.00	0.00	0.00	0.28
Listeriosis, nonperinatal	0	1	1	1	0.00	0.57	0.64	0.28
Listeriosis, perinatal[a]	0	1	0	0	0.00	1.12	0.00	0.00
Lyme disease	0	0	0	0	0.00	0.00	0.00	0.00
Malaria	1	1	1	1	0.35	0.57	0.64	0.28
Measles	0	0	0	0	0.00	0.00	0.00	0.00
Meningitis, viral	13	12	9	7	4.61	6.83	5.72	1.95
Meningococcal infections	1	1	0	3	0.35	0.57	0.00	0.84
Mumps	0	0	1	0	0.00	0.00	0.64	0.00
Pertussis	2	1	1	4	0.71	0.57	0.64	1.11
Psittacosis	0	0	0	0	0.00	0.00	0.00	0.00
Q-fever	0	0	1	0	0.00	0.00	0.64	0.00
Relapsing fever	0	0	0	0	0.00	0.00	0.00	0.00
Rheumatic fever, acute	0	0	0	0	0.00	0.00	0.00	0.00
Rubella	0	0	0	0	0.00	0.00	0.00	0.00
Salmonellosis	41	21	17	48	14.53	11.96	10.80	13.36
Shigellosis	25	18	23	45	8.86	10.25	14.61	12.53
Strongyloidiasis	0	0	1	1	0.00	0.00	0.64	0.28
Syphilis (early latent)	30	62	17	80	10.70	35.40	10.80	22.40
Syphilis (prim. & secon.)	6	13	4	18	2.10	7.40	2.50	5.00
Syphilis (congenital)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetanus	0	0	1	0	0.00	0.00	0.64	0.00
Trichinosis	0	0	0	0	0.00	0.00	0.00	0.00
Tuberculosis	39	45	35	61	13.82	25.62	22.23	16.98
Tularemia	0	0	0	0	0.00	0.00	0.00	0.00
Typhoid fever, case	1	1	0	0	0.35	0.57	0.00	0.00
Typhoid fever, carrier	0	2	0	0	0.00	1.14	0.00	0.00
Typhus fever	0	0	0	0	0.00	0.00	0.00	0.00
Vibrio	2	0	0	0	0.71	0.00	0.00	0.00

[a]Rates for perinatal listeriosis were calculated as cases per 100,000 women aged 15 to 44 years.

Table O-7. Selected Notifiable Diseases
SPA 7. East Area
Los Angeles County, 1998

Disease	Frequency				Rate (Cases per 100,000)			
	Bellflower	East LA	S Antonio	Whittier	Bellflower	East LA	S Antonio	Whittier
AIDS	20	15	47	11	5.59	6.82	10.83	3.38
Amebiasis	3	5	3	2	0.84	2.27	0.69	0.62
Botulism	0	0	0	0	0.00	0.00	0.00	0.00
Brucellosis	0	0	1	0	0.00	0.00	0.23	0.00
Campylobacteriosis	53	34	45	47	14.81	15.46	10.37	14.46
Chlamydia	600	476	1,054	476	204.50	264.00	296.10	178.60
Cholera	0	0	0	0	0.00	0.00	0.00	0.00
Coccidioidomycosis	2	0	1	1	0.56	0.00	0.23	0.31
Cryptosporidiosis	1	0	1	0	0.28	0.00	0.23	0.00
Cysticercosis	1	0	0	1	0.28	0.00	0.00	0.31
Dengue	0	0	1	0	0.00	0.00	0.23	0.00
E. coli O157:H7	0	0	0	2	0.00	0.00	0.00	0.62
Encephalitis	0	0	2	1	0.00	0.00	0.46	0.31
Giardiasis	14	8	28	12	3.91	3.64	6.45	3.69
Gonorrhea	137	55	116	83	46.20	30.20	32.30	30.80
Haemophilus influenzae type b	3	0	1	0	0.84	0.00	0.23	0.00
Hansen's disease (Leprosy)	0	0	0	1	0.00	0.00	0.00	0.31
Hepatitis A	32	30	56	19	8.94	13.64	12.90	5.85
Hepatitis B	5	4	2	1	1.40	1.82	0.46	0.31
Hepatitis C	0	1	1	0	0.00	0.45	0.23	0.00
Hepatitis unspecified	1	1	1	0	0.28	0.45	0.23	0.00
Kawasaki syndrome	3	0	1	0	0.84	0.00	0.23	0.00
Legionellosis	1	0	1	0	0.28	0.00	0.23	0.00
Listeriosis, nonperinatal	0	1	1	0	0.00	0.46	0.23	0.00
Listeriosis, perinatal[a]	0	0	1	0	0.00	0.00	0.42	0.00
Lyme disease	0	0	0	0	0.00	0.00	0.00	0.00
Malaria	2	1	3	0	0.56	0.45	0.69	0.00
Measles	0	0	0	0	0.00	0.00	0.00	0.00
Meningitis, viral	29	9	39	40	8.11	4.09	8.98	12.31
Meningococcal infections	2	1	4	2	0.56	0.45	0.92	0.62
Mumps	1	0	0	0	0.28	0.00	0.00	0.00
Pertussis	5	1	4	3	1.40	0.45	0.92	0.92
Psittacosis	0	0	0	0	0.00	0.00	0.00	0.00
Q-fever	0	0	0	0	0.00	0.00	0.00	0.00
Relapsing fever	0	0	0	0	0.00	0.00	0.00	0.00
Rheumatic fever, acute	0	0	0	0	0.00	0.00	0.00	0.00
Rubella	0	0	0	0	0.00	0.00	0.00	0.00
Salmonellosis	53	39	65	48	14.81	17.74	14.97	14.77
Shigellosis	34	21	47	25	9.50	9.55	10.83	7.69
Strongyloidiasis	0	0	0	0	0.00	0.00	0.00	0.00
Syphilis (early latent)	2	6	21	10	0.60	2.70	4.90	3.10
Syphilis (prim. & secon.)	0	2	5	3	0.00	0.90	1.20	0.90
Syphilis (congenital)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetanus	0	0	0	0	0.00	0.00	0.00	0.00
Trichinosis	0	0	0	0	0.00	0.00	0.00	0.00
Tuberculosis	44	29	52	19	12.30	13.19	11.98	5.85
Tularemia	0	0	0	0	0.00	0.00	0.00	0.00
Typhoid fever, case	0	1	2	0	0.00	0.45	0.46	0.00
Typhoid fever, carrier	0	0	1	0	0.00	0.00	0.23	0.00
Typhus fever	0	0	1	0	0.00	0.00	0.23	0.00
Vibrio	0	0	0	0	0.00	0.00	0.00	0.00

[a] Rates for perinatal listeriosis were calculated as cases per 100,000 women aged 15 to 44 years.

Table O-8. Selected Notifiable Diseases
SPA 8. South Bay Area
Los Angeles County, 1998

Disease	Frequency			Rate (Cases per 100,000)		
	Harbor	Ing	Torrance	Harbor	Ing	Torrance
AIDS	14	62	28	6.98	15.17	6.24
Amebiasis	3	8	5	1.50	1.96	1.11
Botulism	0	0	0	0.00	0.00	0.00
Brucellosis	0	0	0	0.00	0.00	0.00
Campylobacteriosis	39	49	98	19.45	11.99	21.85
Chlamydia	334	1,616	590	203.10	482.20	160.40
Cholera	0	0	0	0.00	0.00	0.00
Coccidioidomycosis	1	0	2	0.50	0.00	0.45
Cryptosporidiosis	2	1	3	1.00	0.24	0.67
Cysticercosis	1	2	1	0.50	0.49	0.22
Dengue	0	2	0	0.00	0.49	0.00
E. coli O157:H7	2	0	1	1.00	0.00	0.22
Encephalitis	1	3	3	0.50	0.73	0.67
Giardiasis	27	24	35	13.46	5.87	7.80
Gonorrhea	60	637	139	36.10	188.30	37.40
Haemophilus influenzae type b	1	0	0	0.50	0.00	0.00
Hansen's disease (Leprosy)	0	2	0	0.00	0.49	0.00
Hepatitis A	26	39	15	12.97	9.54	3.34
Hepatitis B	2	7	2	1.00	1.71	0.45
Hepatitis C	0	0	0	0.00	0.00	0.00
Hepatitis unspecified	1	0	0	0.50	0.00	0.00
Kawasaki syndrome	1	3	0	0.50	0.73	0.00
Legionellosis	0	0	2	0.00	0.00	0.45
Listeriosis, nonperinatal	0	0	0	0.00	0.00	0.00
Listeriosis, perinatal[a]	0	0	0	0.00	0.00	0.00
Lyme disease	0	0	0	0.00	0.00	0.00
Malaria	1	7	2	0.50	1.71	0.45
Measles	0	0	0	0.00	0.00	0.00
Meningitis, viral	16	19	20	7.98	4.65	4.46
Meningococcal infections	1	1	4	0.50	0.24	0.89
Mumps	2	1	0	1.00	0.24	0.00
Pertussis	4	5	3	2.00	1.22	0.67
Psittacosis	0	0	0	0.00	0.00	0.00
Q-fever	0	0	0	0.00	0.00	0.00
Relapsing fever	0	0	0	0.00	0.00	0.00
Rheumatic fever, acute	0	0	0	0.00	0.00	0.00
Rubella	0	0	0	0.00	0.00	0.00
Salmonellosis	33	52	66	16.46	12.73	14.71
Shigellosis	18	31	25	8.98	7.59	5.57
Strongyloidiasis	0	0	0	0.00	0.00	0.00
Syphilis (early latent)	6	51	8	3.00	12.50	1.80
Syphilis (prim. & secon.)	0	8	4	0.00	2.00	0.90
Syphilis (congenital)	N/A	N/A	N/A	N/A	N/A	N/A
Tetanus	0	0	0	0.00	0.00	0.00
Trichinosis	0	1	0	0.00	0.24	0.00
Tuberculosis	15	64	48	7.48	15.66	10.70
Tularemia	0	0	0	0.00	0.00	0.00
Typhoid fever, case	0	0	2	0.00	0.00	0.45
Typhoid fever, carrier	0	1	0	0.00	0.24	0.00
Typhus fever	0	0	0	0.00	0.00	0.00
Vibrio	1	0	0	0.50	0.00	0.00

[a]Rates for perinatal listeriosis were calculated as cases per 100,000 women aged 15 to 44 years.

LIST OF ACRONYMS

The following abbreviations and acronyms may be used throughout this document.

ACDC	Acute Communicable Disease Control Unit
AIDS	Acquired Immunodeficiency Syndrome
AVSS	Automatic Vital Statistics System
CDC	Centers for Disease Control and Prevention
CDHS	California Department of Health Services
CMR	Confidential Morbidity Report
CSF	cerebrospinal fluid
DHS	Department of Health Services, Los Angeles County
DTaP	diphtheria and tetanus toxoids plus acellular pertussis vaccine
DTP	diphtheria and tetanus toxoids plus pertussis vaccine
HBIG	hepatitis B immune globulin
HBsAg	hepatitis B surface antigen
HBV	hepatitis B virus
HCV	hepatitis C virus
HCW	health-care worker
Hib	*Haemophilus influenzae* type b
HIV	human immunodeficiency virus
ICP	infection control practitioner
IDU	injection drug user
IgG	immunoglobulin class G
IPVe	inactivated polio vaccine, enhanced
LAC	Los Angeles County
MMR	measles, mumps, and rubella vaccines
MMWR	*Morbidity and Mortality Weekly Report*
mos.	months
MRSA	methicillin-resistant *Staphylococcus aureus*
N/A	not available
NANB	non-A, non-B (hepatitis)
OPV	oral polio vaccine (Sabin)
OR	odds ratio
PA	perinatally acquired
PCP	*Pneumocystis carinii* pneumonia
RR	relative risk

SPA	service planning area
SNF	skilled nursing facility
sp., spp.	species
STD	sexually transmitted disease
TB	tuberculosis
US	United States

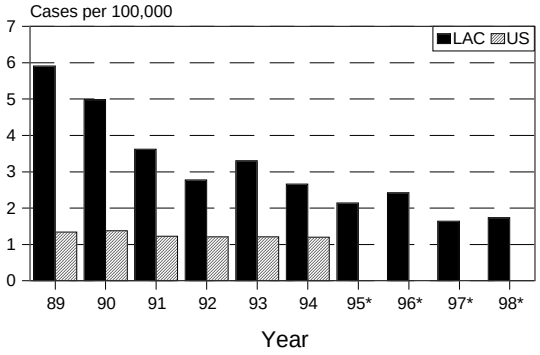
ACUTE COMMUNICABLE DISEASE CONTROL PROGRAM

AMEBIASIS

CRUDE DATA	
Number of Cases	158
Annual Incidence[a]	
LA County	1.74
United States	N/A
Age at Onset	
Mean	32.6
Median	34
Range	0-77 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 1
Amebiasis
Incidence Rates by Year
LAC and US, 1989-1998



*No longer nationally notifiable.

ETIOLOGY

Amebiasis is caused by the protozoan parasite *Entamoeba histolytica*.

DISEASE ABSTRACT

The 1998 amebiasis rate rose slightly but remained at the second lowest rate since 1983.

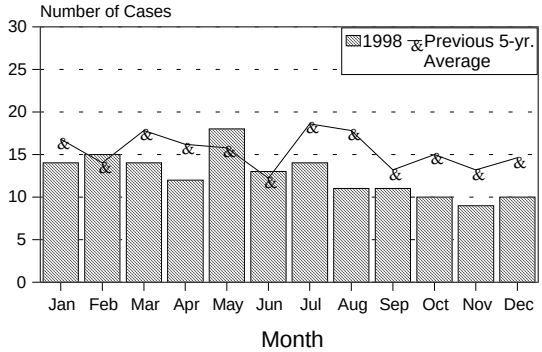
STRATIFIED DATA

Trends: The 1998 amebiasis incidence of 1.74 per 100,000 population is the second lowest on record in Los Angeles County (Figure 1).

Seasonality: Monthly case counts were generally lower than the previous five-year monthly averages. Most cases occurred during the first half of the year (Figure 2).

Age: Rates rose in 1998 among children 5-14 and all adult age groups from 35 to 64 years (Figure 3). The sharp rise in the infant rate represents only 2 cases. As in previous years, nearly one quarter of Hispanic cases, 23%, were under the age of 15, and three quarters of pediatric cases (0-14 years) were Hispanic (76%).

Figure 2
Amebiasis
Cases by Month of Onset
Los Angeles County, 1998



Sex: For the second year the male-to-female rate ratio was below 2:1, at 1.7:1, continuing a trend started in the early 1990s.

Race/Ethnicity: Hispanics continued to experience the highest rate of amebiasis (2.07 per 100,000 population), but the rate remained stable in 1998. Asians and Blacks had rates lower than those of the previous year, but the rate for Whites increased 23% from 1.27 to 1.56 per 100,000 (Figure 4).

Location: The Central Health District had the highest rate in 1998 (4.4 per 100,000), with 13 reported cases. Just 2 cases (0.7 per 100,000) were reported in 1997 and 14 in 1996 (4.3 per 100,000). This suggests 1997's drop was artificial, perhaps due to decreased reporting or reduced access to medical care. Hollywood-Wilshire and Southeast Health Districts also had much higher rates than average, 4.1 and 3.8 per 100,000, respectively (Map 1).

COMMENTS

Amebiasis was removed from the national list of notifiable diseases in 1995 by the Council of State and Territorial Epidemiologists. The impact of a new laboratory test that distinguishes *Entamoeba histolytica* from *E. dispar*, a non-pathogenic amebic species, is unknown.

Figure 3
Amebiasis
Incidence Rates by Age Group
Los Angeles County, 1996-1998

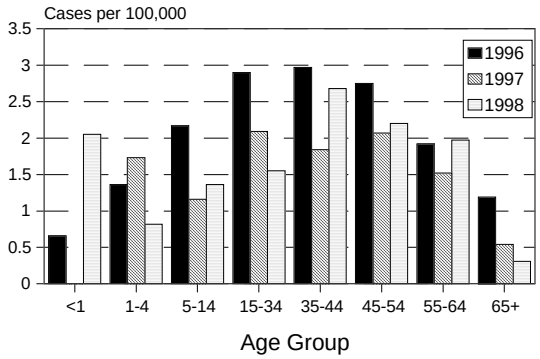
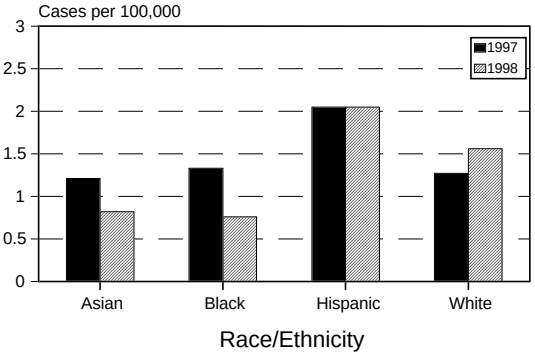
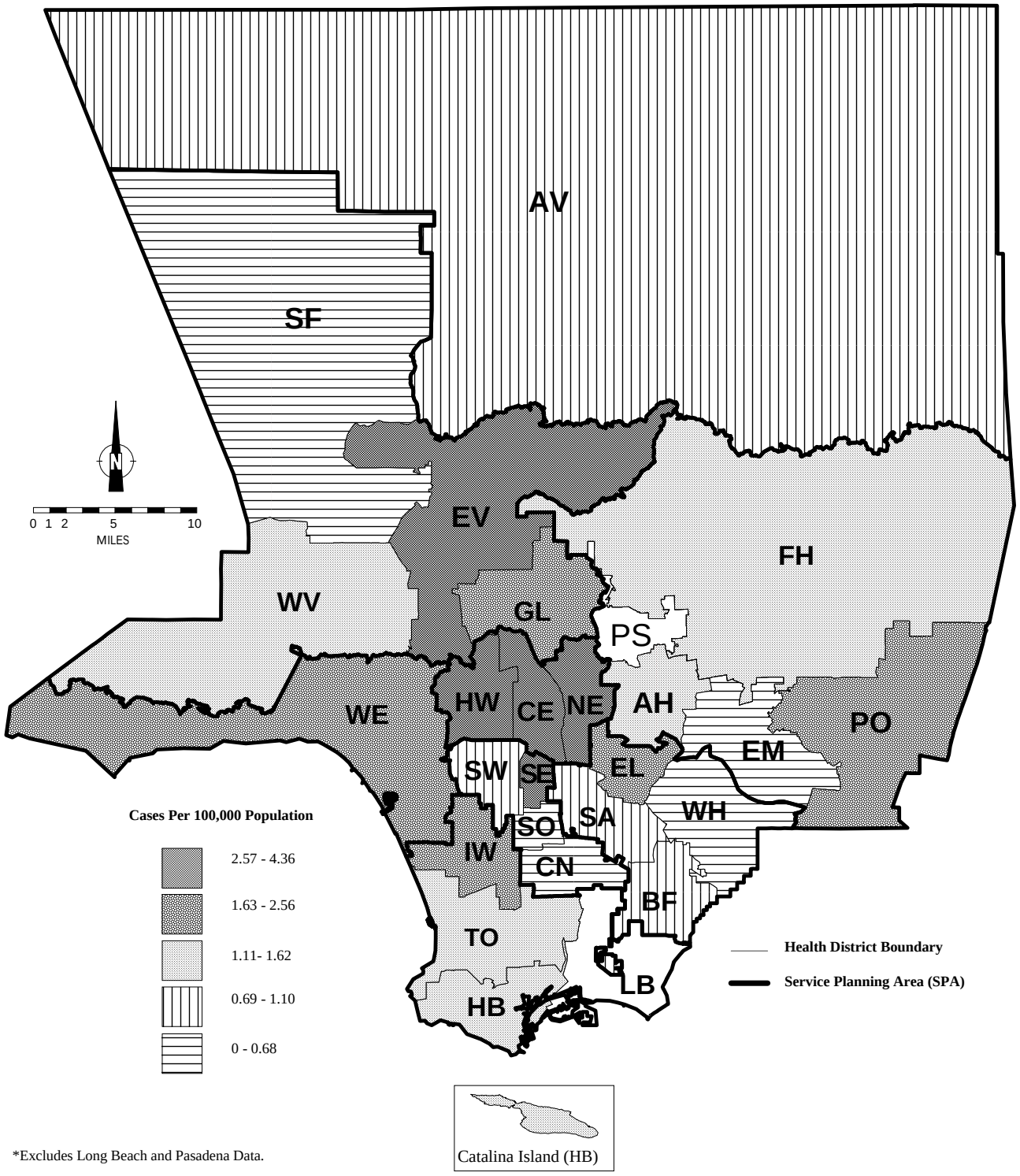


Figure 4
Amebiasis
Race-Specific Incidence Rates by Age Group
Los Angeles County, 1997-1998



MAP 1. Amebiasis
Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

BOTULISM

ETIOLOGY

Botulism is a life-threatening paralytic disease caused by botulinum toxin produced in one of three settings. Foodborne botulism occurs from ingestion of preformed toxin present in contaminated food. In wound botulism, *Clostridium botulinum* spores contaminate a wound and produce toxin under anaerobic conditions; it is particularly common among injection drug users (IDUs). Infant botulism occurs when the organism spores that are ingested by infants (and rarely other persons) germinate in the gut and produce toxin.

DISEASE ABSTRACT

Two cases of botulism, both wound-associated and due to toxin type A, were confirmed in 1998.

The first case was a 38-year-old Hispanic male user of “black tar” heroin. Pre-treatment serum was positive for botulinum toxin type A; anaerobic culture from an abscessed hip yielded *C. botulinum* organisms that produced type A toxin as well. He required ventilatory support and long-term hospitalization.

The second case was a 56-year-old Black male diabetic. In addition to self-administering insulin by injection, he also injected cocaine and heroin. As in the first case, the diagnosis was confirmed serologically and by wound culture. He ultimately died four months later of fungal endocarditis while recovering from his paralysis.

Several suspected cases of clinical wound botulism in IDUs were investigated. Because they could not be confirmed by laboratory tests, these suspected cases were not reported to the State.

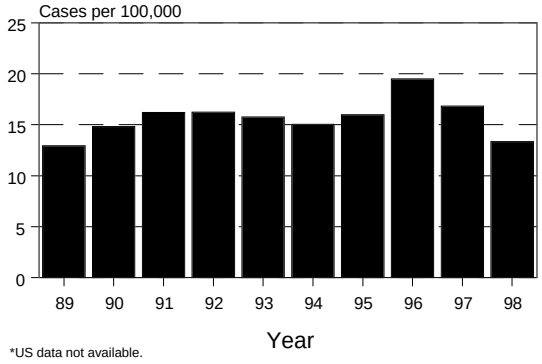
CAMPYLOBACTERIOSIS

CRUDE DATA	
Number of Cases	1,215
Annual Incidence[a]	
LA County	13.4
United States	N/A
Age at Onset	
Mean	27
Median	27
Range	<1-99 yrs
Case Fatality	
LA County	0
United States	N/A

[a]Cases per 100,000 population.

Figure 5

Campylobacteriosis
Incidence Rates by Year
Los Angeles County,* 1989-1998



*US data not available.

ETIOLOGY

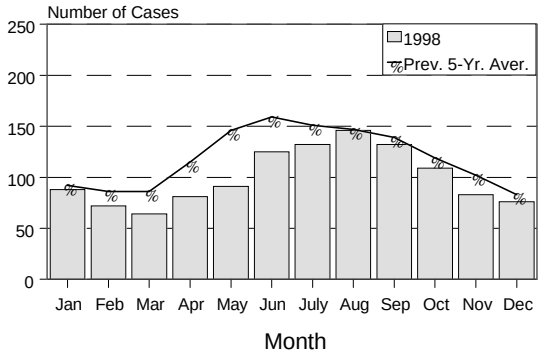
Campylobacter, a gram-negative bacillus. *C. jejuni* was the species most frequently identified.

DISEASE ABSTRACT

Campylobacteriosis rates in 1998 decreased for the second year. Rates are the lowest they have been since 1989. The reason for the decrease is not known but has been seen in other enteric diseases. Rates remained highest in infants less than one year of age. Rates were slightly higher in Hispanics than in Whites, followed by Asians, then Blacks.

Figure 6

Campylobacteriosis
Cases by Month of Onset
Los Angeles County, 1998



STRATIFIED DATA

Trends: The campylobacteriosis rate of 13.4 cases per 100,000 population decreased 20% from the previous year (Figure 5).

Seasonality: As in previous years, the number of cases increased in the spring, with incidence peaking June through September. The incidence was lower than the previous five-year average in all months in 1998. The reason for this decline is not known (Figure 6).

Age: Rates decreased in all age groups, between 1997 and 1998. Rates among infants (43.1 per 100,000) continued to be highest of any age group (Figure 7).

Sex: The male-to-female ratio was 1.3:1.

Race/Ethnicity: Campylobacteriosis age-adjusted rates were highest among Whites (14.2 per 100,000), followed by Hispanics (13.8 per 100,000). Rates decreased in all ethnic groups; the largest decrease occurred among Whites (38%) followed by Asians (24%) (Figure 8).

Location: Health districts with the highest incidence in 1998 were Torrance (21.9 per 100,000), San Fernando (19.7 per 100,000), Southeast (19.7 per 100,000), and Harbor (19.5 per 100,000) (Map 2).

COMMENTS

Data analysis revealed no definitive reasons for the 22% increase in the campylobacteriosis incidence rate in 1996 and the decrease in 1997-1998 comparable to rates from 1989-1995. There were no deaths in 1998 associated with campylobacteriosis.

Figure 7

Campylobacteriosis
Incidence Rates by Age Group
Los Angeles County, 1997-1998

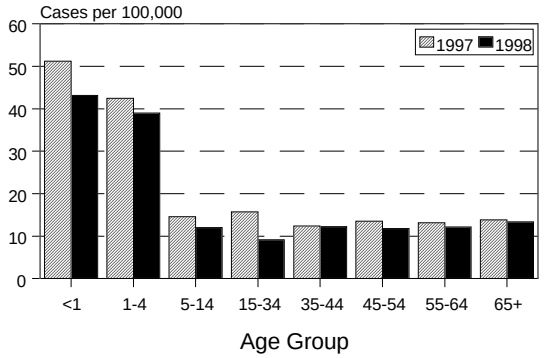
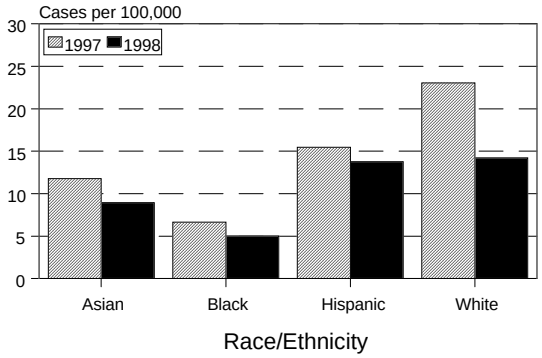
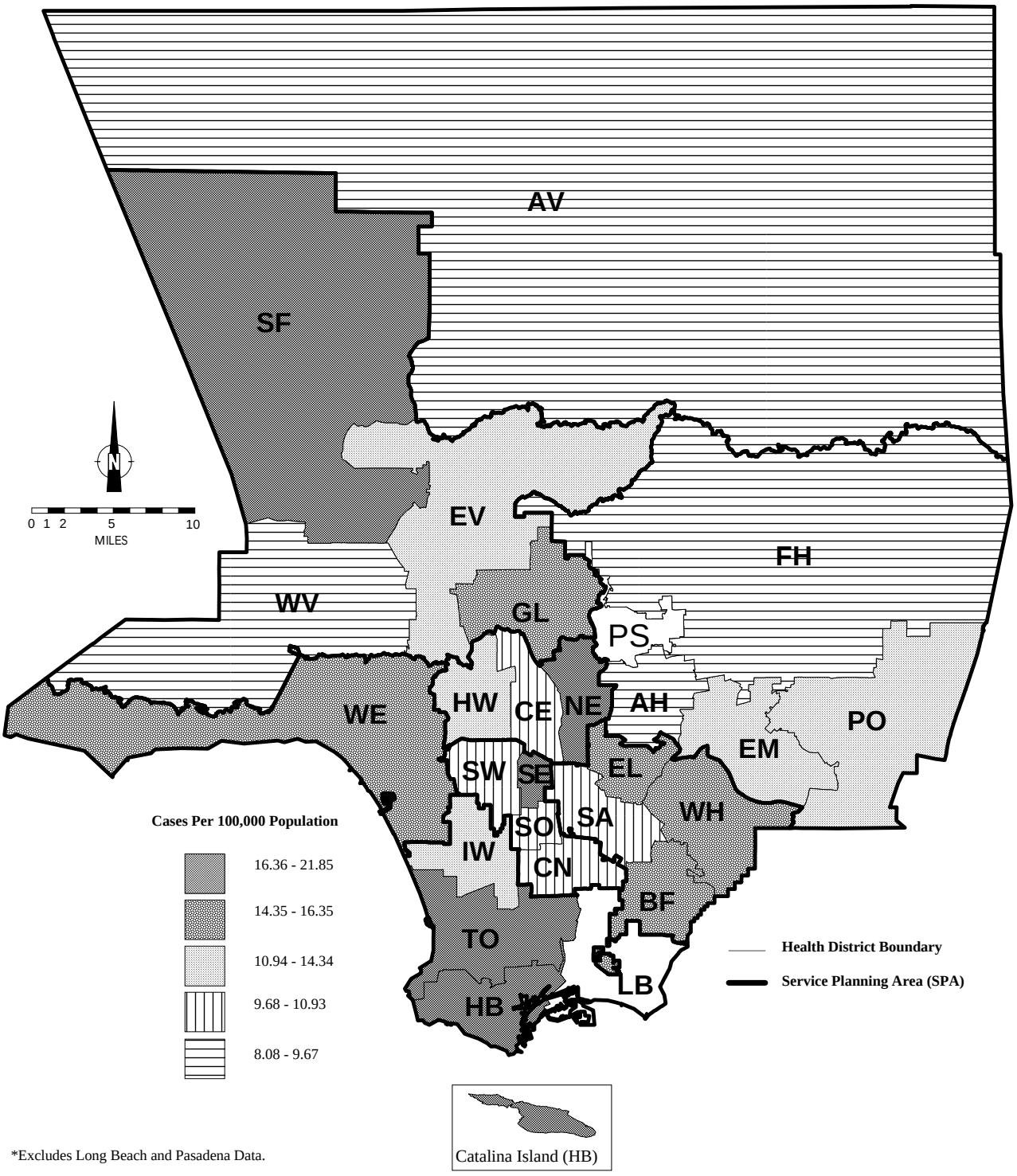


Figure 8

Campylobacteriosis
Age-adjusted Rates by Race/Ethnicity
Los Angeles County, 1997-1998



MAP 2. Campylobacteriosis
Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

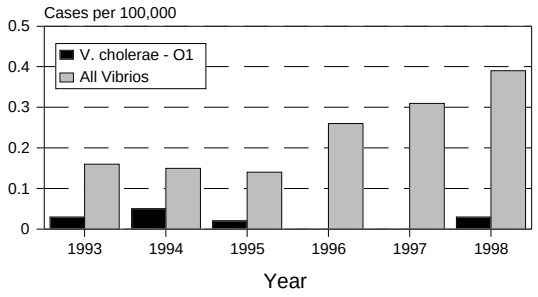
CHOLERA AND OTHER VIBRIOSES

CRUDE DATA	
Number of Cases	36
Annual Incidence[a]	
LA County	0.39
California	N/A
United States	N/A
Case Fatality	
LA County	3.6%
United States	N/A

[a] cases per 100,000 population.

Figure 9

All Vibrios
Incidence Rates by Year
Los Angeles County, 1993 - 1998



ETIOLOGY

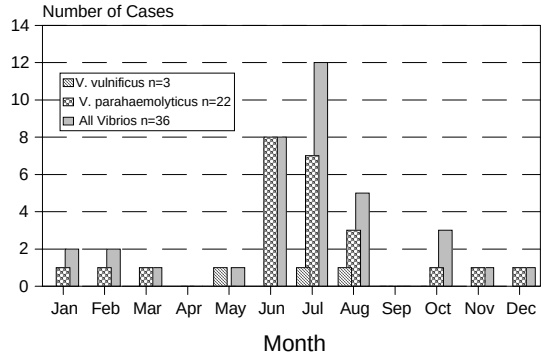
The genus *Vibrio* consists of gram-negative, curved, motile rods, and contains about a dozen species known to cause illness in man. The most notable *Vibrio* species reported in Los Angeles County (LAC) in 1998 were *V. parahaemolyticus* (22), *V. cholera*- O1 (3), and, *V. vulnificus* (3).

DISEASE ABSTRACT

There were three cases of cholera in LAC in 1998 compared to none for the previous two years (Figure 9). The number of reported *V. parahaemolyticus* cases increased again in 1998, accounting for 61% of the total Vibrio cases.

Figure 10

All Vibrios
Cases by Month of Onset
Los Angeles County, 1998



STRATIFIED DATA

Seasonality: The majority of cases occurred in the summer months (Figure 10). Recent changes in weather patterns, which have been occurring in the last few years, have increased ocean water temperatures and may have played a role in the increased number of Vibrio cases in general and *V. parahaemolyticus* cases specifically.

Figure 11

All Vibrios
Incidence Rates by Age Group
Los Angeles County, 1998

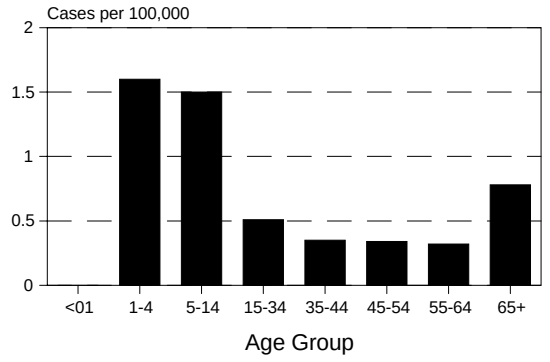
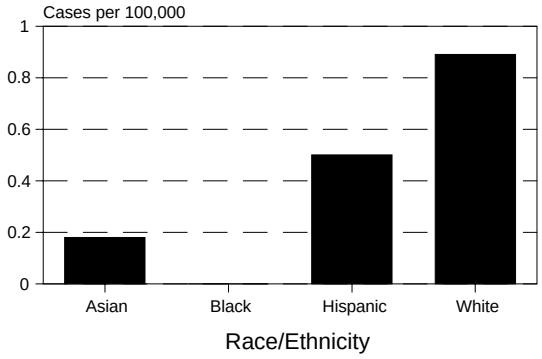


Figure 12

All Vibrios
Incidence Rates by Race/Ethnicity
Los Angeles County, 1998



Age: Only three (8%) of 36 cases were under 15 years of age, in contrast to other bacterial causes of gastroenteritis. The majority (64%) of cases were in the 15- to 44-year-old age range. Incidence rates are shown in Figure 11.

Sex: Twenty-five (69%) of the cases were male.

Race/Ethnicity: Twelve (33%) of the cases were White, 21 (58%) were Hispanic, two (6%) were Asian, and no Black cases occurred. Incidence rates are shown in Figure 12.

Table 1. Vibrio Cases by Species* and Demographic Characteristics
Los Angeles County, 1998

Species	Number Reported	Average Age (Range)	Seasonal Clustering	Notable Risk Factors
V. parahaemolyticus	22	37 (8-68)	Summer	Seafood (17), oysters (14)
V. cholerae -O1	3	33 (32-36)	Summer, Fall	Seafood (3), travel (2)
*V. vulnificus***	3	50 (40-66)	Summer	Seafood (3), oysters (1)
V. alginolyticus	1	9	Summer	Otitis externa
V. cholera non-O1	2	35 (31-40)	Summer, Winter	Seafood (1), oysters (1)
V. mimicus	1	31	Fall	
V. fluvialis	3	51 (19-69)	Winter, Summer	Fishing (1)

*** One case, unknown species.**
**** Non-oyster *V. vulnificus* cases had potential for oyster cross-contamination.**

PREVENTION

Risk from vibrioses can be prevented or reduced by avoiding seawater contamination of food (especially raw fish and shellfish) or drink (Table 1). *V. vulnificus* is a particular risk for persons with pre-existing liver disease, frequently leading to soft tissue invasion, limb amputation, and death. Males may be more at risk for infection because of their tendency to engage in behaviors such as drinking alcohol and eating raw seafood, especially oysters.

COMMENTS

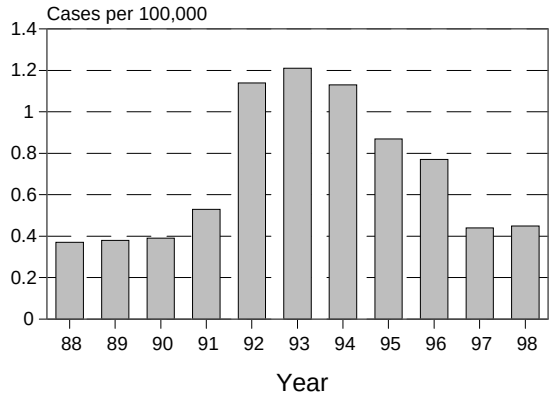
In August 1997, the California Department of Health Services issued a warning about eating raw oysters, mussels, and clams harvested off the coasts of British Columbia and Washington State due to the risk of infection with *V. parahaemolyticus*. This came after a temporary closing of all oyster harvesting in British Columbia and a temporary ban on the sale of raw and undercooked shellfish in all restaurants in the Vancouver and Richmond municipalities. Over 100 cases of vibrioses were identified in British Columbia alone. In 1998 there were reports of contaminated oyster bed from Washington, Oregon, and Texas. In 1998, 14 of 22 (64%) cases of *V. parahaemolyticus* was found to be associated with oyster consumption.

COCCIDIOIDOMYCOSIS

CRUDE DATA	
Number of Cases	41
Annual Incidence[a]	
LA County	0.45
California[b]	2.10
United States	N/A
Age at Onset	
Mean	43
Median	40
Range	18-76 yrs
Case Fatality	
LA County	19.5%
United States	N/A

[a] Cases per 100,000 population.
[b] California Department of Health Services Surveillance and Statistics Section.

Figure 13
Coccidioidomycosis
Incidence Rates by Year
Los Angeles County, 1988-1998



ETIOLOGY

Coccidioides immitis, a dimorphic fungus found in the soil.

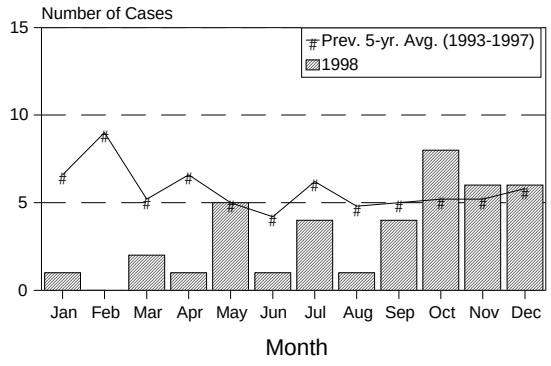
DISEASE ABSTRACT

The coccidioidomycosis incidence rate for 1998 has declined since 1993 and is lower than the five-year average.

STRATIFIED DATA

Trends: The incidence of coccidioidomycosis declined from 0.77 cases per 100,000 population in 1996 to 0.44 in 1997 and 0.45 in 1998. This is far below the previous 10-year average incidence of 0.72 but similar to the late 1980s incidence (Figure 13).

Figure 14
Coccidioidomycosis
Cases by Month of Onset
Los Angeles County,1998



Seasonality: In 1998, more cases were observed in the fall months compared to the previous five-year average (Figure 14). The most noticeable difference is the lack of cases in the first few months of the year.

Age: The highest incidence rate was observed in the 65 years and older age group (0.94 cases per 100,000 population), followed by the 45-54 (0.93), 55-64 (0.66), and 15-34 (.52) age groups (Figure 15). Overall, the predominance of males influenced the crude rates for all age groups except the 55-64 year old age group. There were no cases under the age of 18.

Sex: The male-to-female rate ratio was 4:1. The mean age for males was 45 years and 37 for females. The difference was likely due to occupational and recreational dust exposure of males although this was not clearly evident from the information collected (Figure 15). No female cases reported being pregnant.

Race/Ethnicity: As shown in Figure 16, a higher incidence was observed among Blacks (1.14 cases per 100,000 population) with incidence substantially lower in Whites (0.43) and Hispanics (0.31). The incidence rate in Asians was the lowest (0.27). Ethnic groups considered at highest risk for **disseminated disease** (spreading to and infecting many parts of the body) are Blacks, Filipinos and other Asians, Mexican-Americans, and Native Americans. Of the seven cases with disseminated disease, there were four Blacks, two Hispanics, and one Asian.

Location: Antelope Valley District had the highest rate of coccidioidomycosis at 1.28 per 100,000 population (4 cases) followed by Northeast with a rate of 1.14 (4), Central with 1.01 (3), and San Fernando with 1.01(4). The West Valley District had the highest number of cases (7).

Travel: Nine cases reported travel within four weeks before onset of illness: seven traveled within California and two traveled outside California to Nevada and Mexico. Traditionally, coccidioidomycosis is known to be endemic in these areas as well as in California.

Underlying Disease: Of the eight cases with known underlying disease, two cases were

Figure 15
Coccidioidomycosis
Incidence Rates by Age and Sex
Los Angeles County, 1998

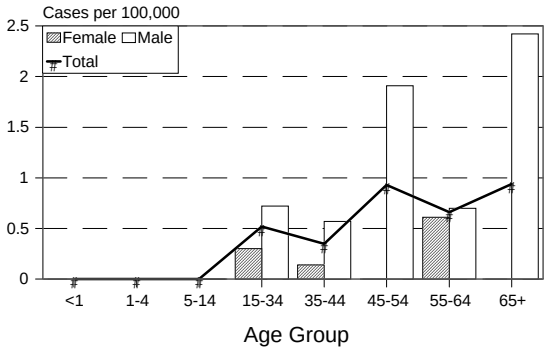


Figure 16
Coccidioidomycosis
Incidence Rates by Race/Ethnicity
Los Angeles County, 1998

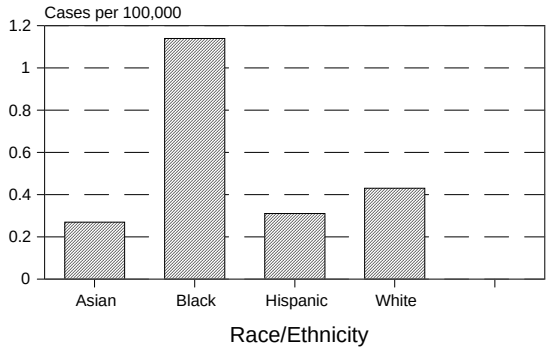
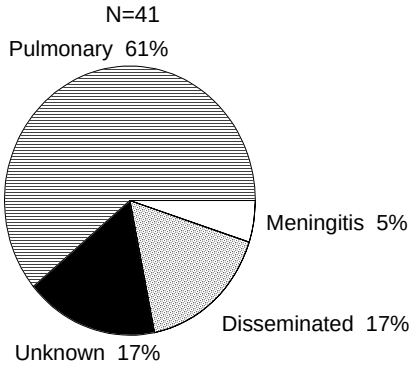


Figure 17
Coccidioidomycosis
by Site of Infection, LA County, 1998



diabetics, two were HIV positive, one had chronic hepatitis B, one had leukemia, one had cardiac problems and one had a history of asthma. Fifty percent of these cases died.

Site of Infection: Of the cases reported in 1998, sites of infection were reported as 61% primary pulmonary, 17% disseminated, 5% meningitis, and 17% of the case infection sites were unknown (Figure 17).

COMMENTS

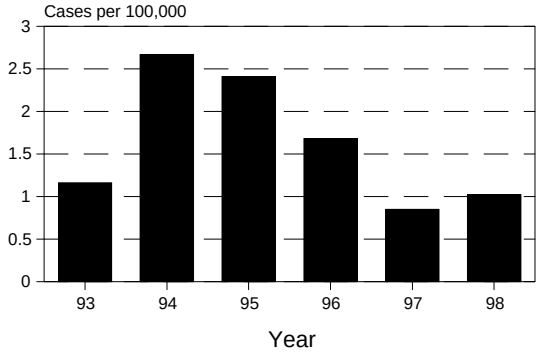
Coccidioidomycosis is a disease associated with exposure to dust containing *Coccidiodes immitis* spores. Environmental conditions conducive to an increased occurrence of coccidioidomycosis are as follows: arid to semi-arid regions, dust storms, lower altitude, hotter summers, warmer winters, and sandy, alkaline soils. Southern California is a known endemic area. Since there is no safe and effective vaccine or drug to prevent this disease, prevention lies mainly in dust control such as planting grass in dusty areas, putting oil on roadways, wetting down soil, air conditioning homes, and wearing masks or respirators when exposure is likely. Other options may be to warn individuals who are at high risk for severe disease not to travel to endemic areas when conditions (dusty) are most dangerous for exposure. Future areas of study should examine weather patterns and geography using geographic information systems to quantify the effects on the incidence of coccidioidomycosis.

CRYPTOSPORIDIOSIS

CRUDE DATA	
Number of Cases	93
Annual Incidence[a]	
LA County	1.02
United States	N/A
Age at Onset	
Mean	34
Median	36
Range	<1-81 yrs
Case Fatality	
LA County	0.0%
United States	0.0%

[a]Cases per 100,000 population.

Figure 18
Cryptosporidiosis
Incidence Rates by Year
Los Angeles County, 1993-1998



ETIOLOGY

Cryptosporidiosis is caused by ingestion of cysts of the parasite *Cryptosporidium parvum*.

DISEASE ABSTRACT

Cryptosporidiosis has been an AIDS-defining disease since 1983. The extent of HIV infection and other cryptosporidiosis risk factors have not been previously quantified. Reported cases have fallen since the advent of highly active antiretroviral therapy.

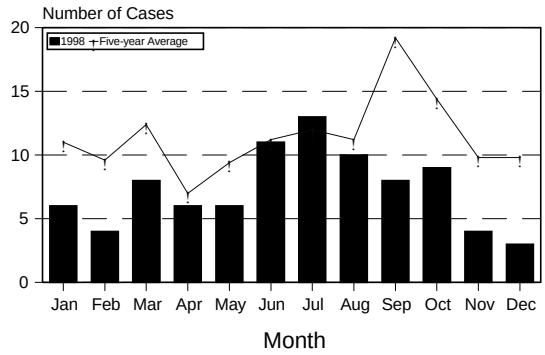
STRATIFIED DATA

Trends: The rate of cryptosporidiosis rose slightly from 1997 but remained low for the decade (Figure 18).

Seasonality: Cases were below the previous five-year average in every month except July (Figure 19). The typical peak seen in late summer with waterborne infections did not occur.

Age: The incidence of cryptosporidiosis was greatest in middle-aged adults 35 to 54 years of age (Figure 20). This was true for each race/ethnic group.

Figure 19
Cryptosporidiosis
Cases by Month of Onset
Los Angeles County, 1998

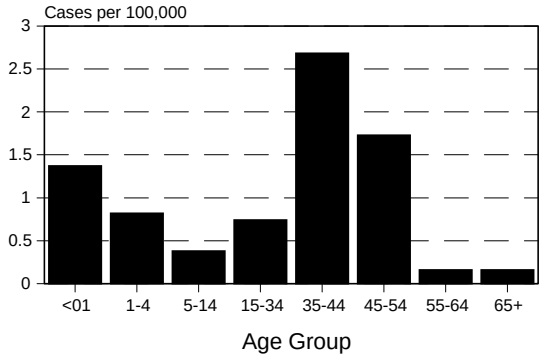


Sex: The male-to-female rate ratio dropped from 3.3:1 to 2.7:1. The drop was accounted for by a disproportionate increase in female cases.

Race/Ethnicity: Whites had the highest rate by far at 1.26 per 100,000 population (Figure 21). The numbers of cases among Asians (3) and Blacks (4) were too low for meaningful interpretation. This variable was unknown for 26 cases (28%).

Location: Hollywood-Wilshire, Central, and East Valley Districts had the highest rates (4.1, 2.3, and 2.1 cases per 100,000, respectively); historically these districts have had high AIDS prevalence rates. Six districts reported no cases at all.

Figure 20
Cryptosporidiosis
Incidence Rates by Age Group
Los Angeles County, 1998

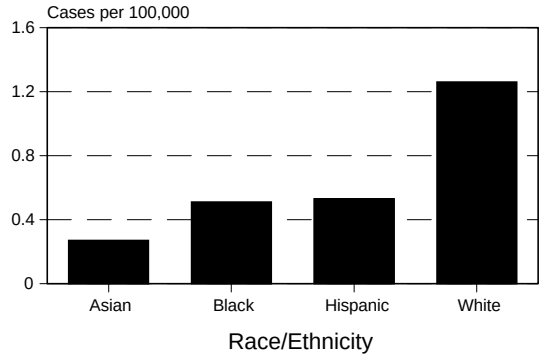


COMMENTS

Cases among persons with AIDS have decreased in other jurisdictions as a result of highly active antiretroviral therapy ("HAART"). This likely explains much of the cryptosporidiosis rate reduction seen in LAC during the last two years.

Additional risk information was available on 69 cases (Table 2); these cases were more likely than non-interviewed cases to be White or Hispanic, but did not differ by age or location.

Figure 21
Cryptosporidiosis
Incidence Rates by Race/Ethnicity
Los Angeles County, 1998



Animal contact was the most commonly named risk factor, occurring in 44%. Outdoor camping or swimming and foreign travel were each reported by 22% of cases, and 19% were immigrants. Further details such as type of animal or nature of animal exposure, swimming location, country visited, or date of immigration were not provided. All other risk factors occurred in less than 10% of cases.

HIV infection was acknowledged by 36 cases (52%). Males were much more likely than females to be HIV+ (71% v. 9.5%, OR=21.9, p<0.000003). The male:female case ratio among HIV-infected cases was 17:1 (34/2), while the same ratio for purported HIV negative cryptosporidiosis cases was 3:4 (14/19). Male HIV+ cases were more likely than male HIV-negative cases to admit to having male sexual partners (84% vs. 43%, p=0.0007). There was no difference in HIV status by race. The only risk factor that differed significantly by HIV status was animal contact; HIV-negative cases

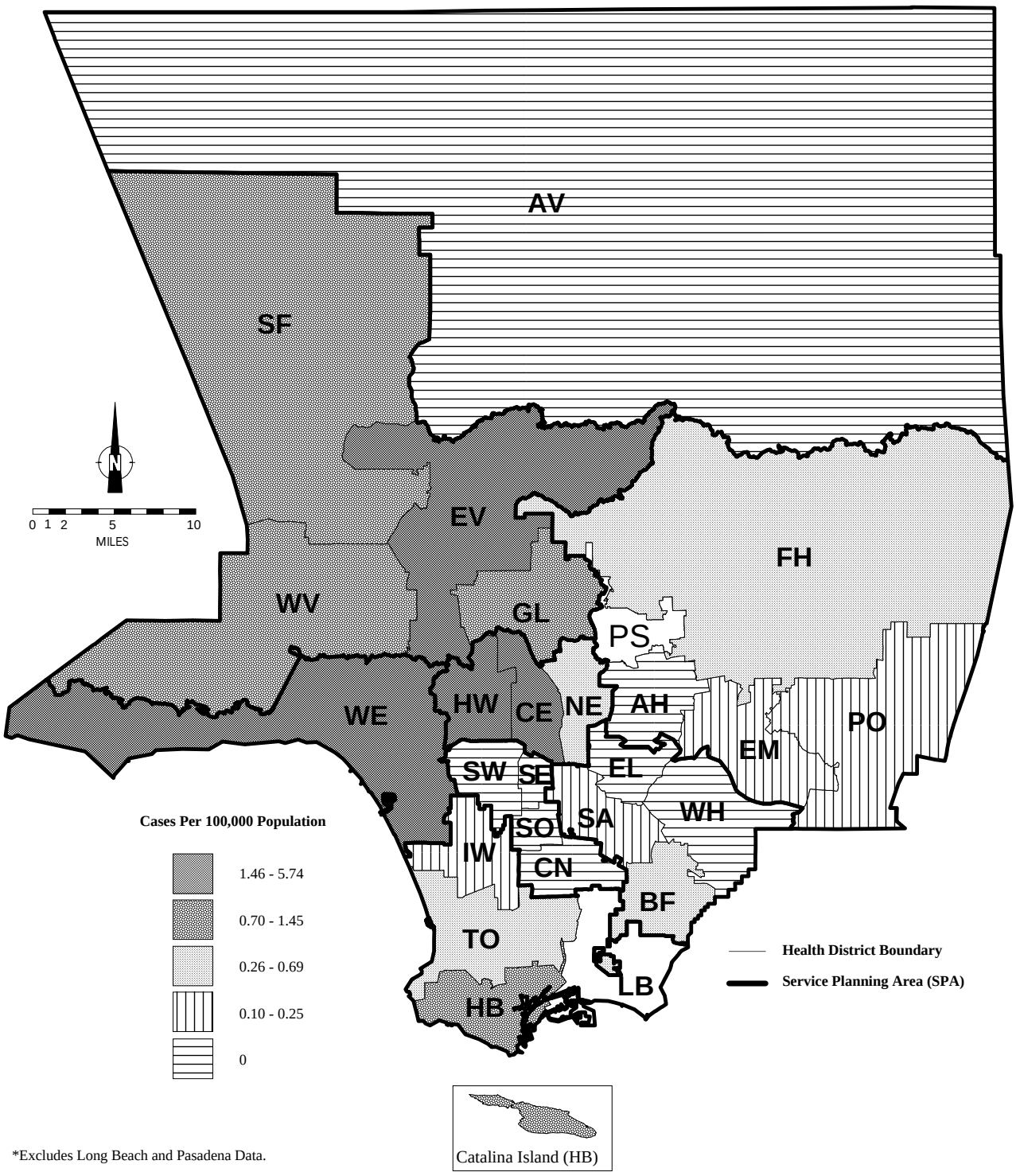
were more likely to report recent animal contact (65% vs. 54%, p=0.02). Animal contact did not differ by gender.

These findings suggest that, while environmental sources may be the cause of many cryptosporidiosis cases, personal behaviors such as sexual activity also may play a role in transmission in Los Angeles County.

Table 2. Risk Factors for Cryptosporidiosis Cases by HIV Infection Status and Gender
Los Angeles County, 1998

	HIV Infected			Not HIV Infected		
Risk Factors	Male n=34	Female n=2	Total n=36	Male n=14	Female n=19	Total n=33
Immigrant	7/31	1 /1	8/32	2/12	3/17	5/29
Contact to Case	1/28	0/1	1/29	0/8	0/17	0/25
Foreign Travel	4/32	1 /2	5/34	5/13	5/18	10/31
Untreated Water	2/32	0/1	2/33	3/12	1/16	4/28
Developmentally Disabled	0/32	0/2	0/34	0/14	0/18	0/32
Day Care Center	0/32	0/2	0/34	0/13	1/18	1/31
Colonic Irrigation	1/31	0/2	1/33	0/14	2/18	2/32
Camping, Swimming	7/32	0/1	7/33	3/13	5/18	8/31
Unpasteurized Milk	0/30	1 /2	1/32	0/12	0/18	0/30
Plumbing Trouble	3/32	0/2	3/34	2/13	3/18	5/31
Contact with Animals	10/32	0/1	10/33	7/13	13/18	20/31
Homosexual	27/32	0/1	27/33	3/7	1/15	4/22

MAP 3. Cryptosporidiosis
Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

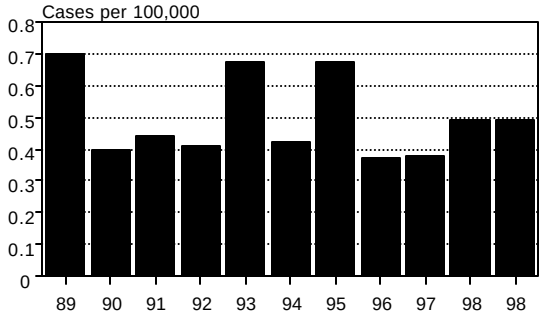
ENCEPHALITIS

CRUDE DATA	
Number of Cases	45
Annual Incidence[a]	
LA County	0.49
California	N/A
United States	N/A
Age at Onset	
Mean	27
Median	14
Range	0-82 yrs
Case Fatality	
LA County	24%[b]
United States	N/A

[a]Cases per 100,000 population.
[b]Excludes AIDS-associated cases.

Figure 22

Encephalitis
Incidence Rates by Year
Los Angeles County, 1989-1998



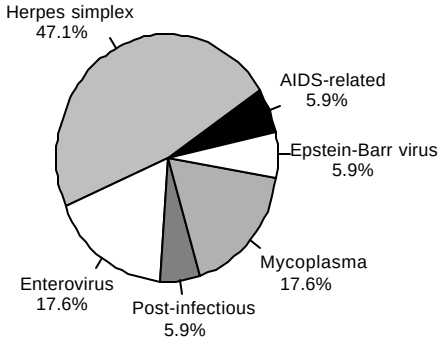
ETIOLOGY

Encephalitis, an inflammation of the brain, can result from infection with a number of different viruses, especially the arboviruses.

DISEASE ABSTRACT

Figure 23

Etiology of Encephalitis Cases, 1998



*Sixty-two percent of encephalitis etiologies were not identified.

The 1998 incidence of viral encephalitis is slightly higher than 1997, but remains in the range seen during non-epidemic years. A seasonal increase occurred in late winter to spring in 1998, which was earlier than usual compared to the previous five-year average, perhaps related to the milder winter in 1998. The highest age-specific incidence rate (2.05 cases per 100,000 population) was observed in children less than one year of age, followed by the 1-4 age group (1.32 per 100,000), then those more than 65 years (1.26 per 100,000). The male-to-female rate ratio was 1:1.4 . Hispanics and Whites had the highest crude incidence rates (each 0.46 cases per 100,000 population), followed by Blacks (0.38 cases per 100,000), and Asians (0.37 cases per 100,000). Cases of encephalitis occurred throughout Los Angeles County, with Alhambra, Foothill and Glendale Health Districts having the highest rates (1.09, 0.97, and 0.90 cases per 100,000

population, respectively).

The one reported case of St. Louis encephalitis occurred in an 83-year-old woman who reported exposure to mosquito bites while sitting on her porch in the evenings in Pomona.

COMMENTS

Despite the fact that the Public Health Laboratory provides free testing of clinical samples, few are submitted, and the etiologic agent for most cases is not identified. In 1998, the etiology was unknown for 62% of reported cases.

Of particular public health concern in LAC are the arthropod-borne (arboviral) encephalitides, especially those due to St. Louis encephalitis (SLE) and Western equine encephalitis (WEE) viruses. Since 1985, sporadic cases of SLE have been reported, following an outbreak of 16 cases in 1984. The potential for another SLE outbreak exists, as the sporadic cases in previous years and identification of SLE in sentinel animal populations indicate that the virus is now endemic in LAC. The annual mosquito-borne encephalitis surveillance program consists of surveillance for equine cases of WEE, monitoring of mosquito populations, laboratory testing of mosquitoes for WEE and SLE viruses, and twice monthly testing of sentinel chicken flocks for SLE and WEE. Elimination of standing water and proper maintenance of ponds and swimming pools decrease the available sites for hatching and maturation of mosquito larvae. The State of California Mosquito Abatement Districts monitor and control populations of these insects.

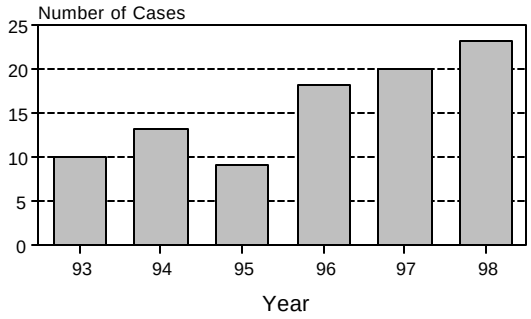
ESCHERICHIA COLI O157:H7

CRUDE DATA	
Number of Cases	23
Annual Incidence[a]	
LA County	0.3
California[b]	0.8
United States[b]	1.2
Age at Onset	
Mean	35
Median	26
Range	10 mos-84 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.
[b]National Electronic Telecommunications System for Surveillance.

Figure 24

Escherichia coli O157:H7
Cases by Year
Los Angeles County, 1993-1998



ETIOLOGY

Escherichia coli O157:H7, a gram-negative bacillus, is a specific serotype of the enterohemorrhagic class of *Escherichia coli* which produces cytotoxins via plasmids called shiga-like toxins or verocytotoxins. Clinical complications include hemolytic uremic syndrome (HUS) and thrombotic thrombocytopenic purpura (TTP).

DISEASE ABSTRACT

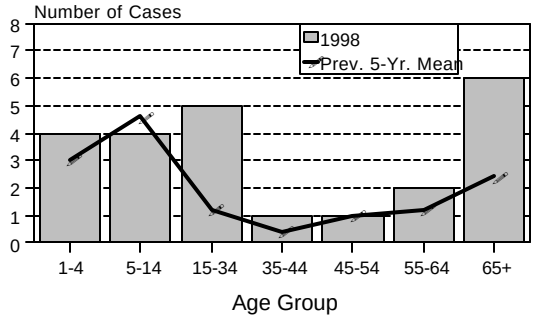
The 1998 incidence rate of *E. coli* O157:H7 increased to its highest rate in five years. The majority of cases were White and <35 years of age. No outbreaks were identified.

STRATIFIED DATA

Although the number of *E. coli* O157:H7 cases more than doubled from nine cases in 1995 to 23 in 1998, the 1998 rate was far below the California and US rates (Figure 24). The 65+ year age group had the most reported cases (6) followed by the 15-34 year age group with 5 cases (Figure 25). The male-to-female rate ratio was 0.9:1. The majority of the cases were White (18), with three Asian, one Hispanic, and

Figure 25

Esherichia coli O157:H7
Cases by Age Group
Los Angeles County, 1998 (N = 23)



one Black. The Pomona and West Valley Health Districts had the most cases reported (three cases each). For almost every month the number of 1998 cases exceeded the previous five-year mean (Figure 26).

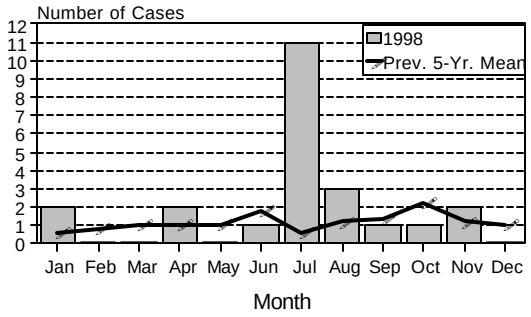
Aside from one case that was associated with another *E. coli* O157 outbreak in Alpine, Wyoming, no LAC clustering of cases was identified. There was a peak in July with 11 cases, but no link was found among the cases. The most common food exposures mentioned occurring among cases within seven days of onset were consuming ground beef (70%), roast beef (57%) and patronizing a fast food restaurant (43%).

Ninety-six percent (22) of cases reported abdominal cramps, 83% (19) had bloody diarrhea, and 52% (12) reported fever. Hospitalization was documented in 43% (10) of the cases. None of the three HUS cases reported in LAC in 1998 were positive for *E. coli* O157:H7. There were no cases with TTP, one case required surgery, and no cases underwent dialysis.

COMMENTS

Figure 26

Escherichia coli O157:H7
Cases by Month of Onset
Los Angeles County, 1998 (N = 23)



In recent years, efforts have been made to improve *E. coli* O157:H7 and HUS surveillance. The increase observed in 1998 may be a continuing result of changes in surveillance such as the implementation of active surveillance activities in late 1995 and the disease becoming state reportable in 1996. Annual incidence of *E. coli* O157:H7 has been steadily increasing since 1995. However, Since 83% of reported cases had bloody diarrhea with only 26% vomiting, it is apparent only severe cases are being reported or diagnosed.

Although infection with *E. coli* O157:H7 is most often associated with the consumption of inadequately cooked beef and raw milk, recent outbreaks in the US have implicated contaminated produce and their products such as unpasteurized apple cider, melons, alfalfa sprouts, iceberg and leaf lettuce, and mesclun (a mix of greens). For 1998 cases, the most commonly reported food exposures seven days before illness were ground beef (16), roast beef (13), and eating at a fast food restaurant(10). Since these three exposures do not account for all cases, other sources such as contaminated produce may have transmitted *E. coli* O157:H7 infection. Health department personnel should collect more detailed food histories for not only beef and dairy products, but also for vegetables and fruits.

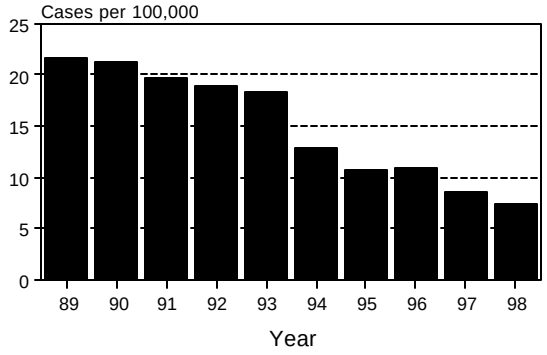
Future efforts should concentrate on the education of physicians to consider *E. coli* O157:H7 in their diagnoses, laboratories to screen all bloody stool specimens and utilize the proper media, and the public regarding food handling practices and high-risk foods. In addition, enhancement of surveillance activities, the collection of more detailed food histories, and strengthening of national processing regulations to decrease food contamination should be targeted.

GIARDIASIS

CRUDE DATA	
Number of Cases	670
Annual Incidence[a]	
LA County	7.37
United States	N/A
Age at Onset	
Mean	23.8
Median	20
Range	<1-82 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 27
Giardiasis
Incidence Rates by Year
Los Angeles County, 1989-1998



ETIOLOGY

Giardiasis is caused by ingestion of cysts of the protozoan parasite *Giardia lamblia*.

DISEASE ABSTRACT

The year 1998 had the lowest rate of giardiasis ever in Los Angeles County. One small giardiasis outbreak was reported in 1998.

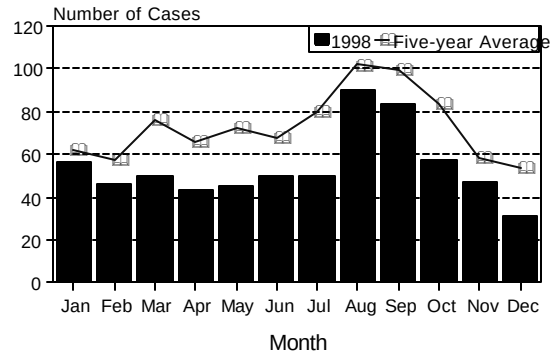
STRATIFIED DATA

Trends: The rate of giardiasis has dropped annually since its 1989 high point of 21.7 cases per 100,000. The 1998 incidence of giardiasis was the lowest since 1981 (Figure 27).

Seasonality: The typical late summer peak of cases was evident in 1998 (Figure 28).

Age: The age-specific incidence of giardiasis was greatest in children aged 1-4 years (23.7 per 100,000) followed by children aged 5-14 years (12.1 per 100,000) (Figure 29).

Figure 28
Giardiasis
Cases by Month of Onset
Los Angeles County, 1998



Sex: The male-to-female rate ratio rose from 1.2:1 to 1.4:1, still below the 1996 rate of 1.5:1.

Race/Ethnicity: Rates for Hispanics and Whites were substantially higher than those of Asians and Blacks (Figure 30).

Location: El Monte and Harbor Health Districts had the highest rates (Map 4).

Figure 29

Giardiasis
Incidence Rates by Age Group
Los Angeles County, 1998

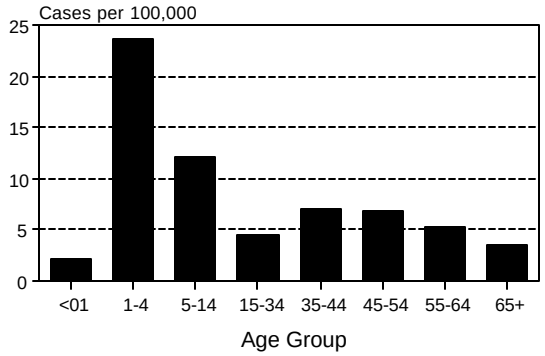
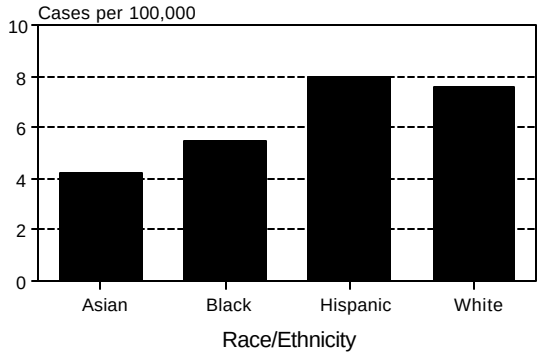
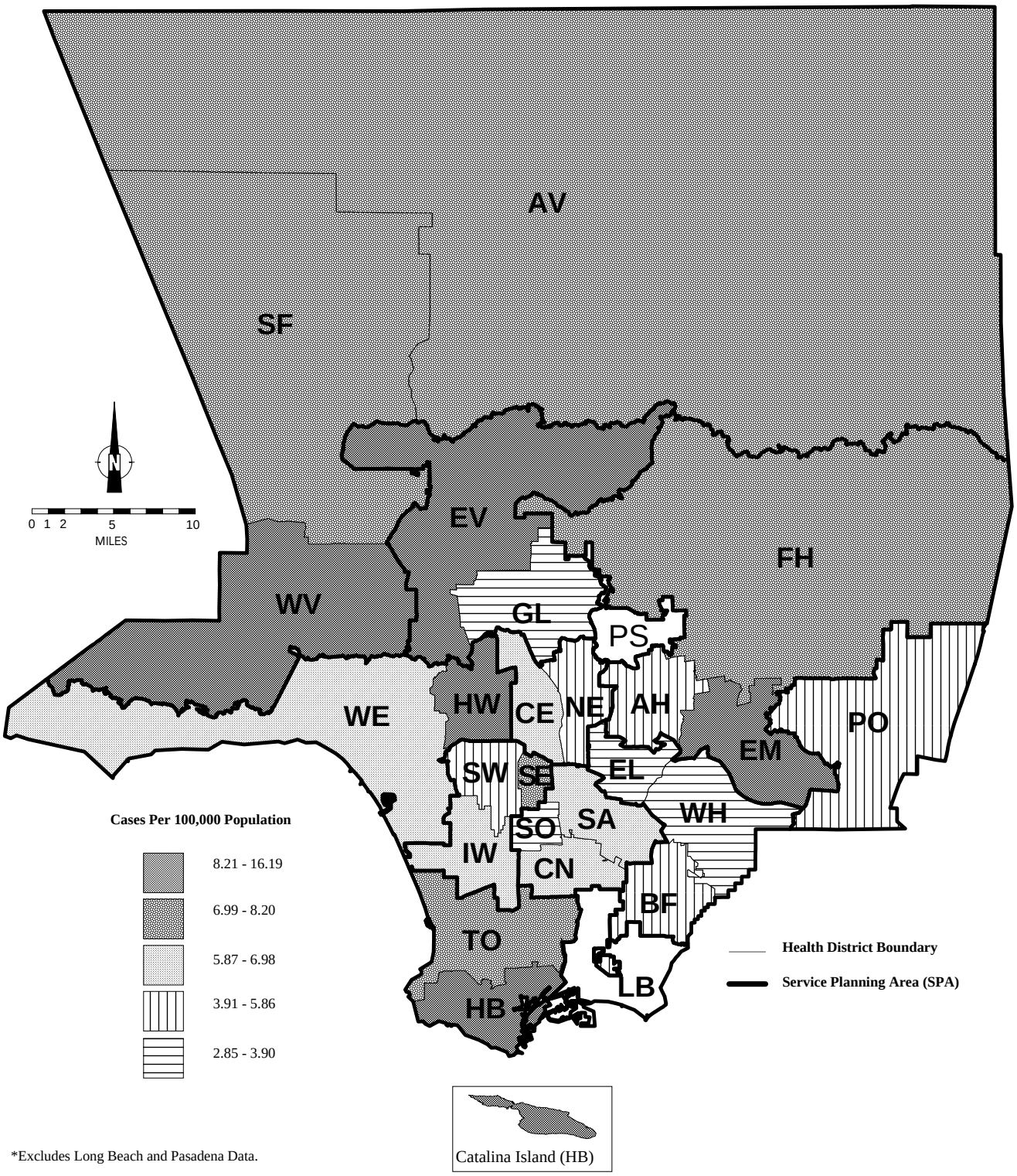


Figure 30

Giardiasis
Incidence Rates by Race/Ethnicity
Los Angeles County, 1998



MAP 4. Giardiasis
Rates by Health District, Los Angeles County, 1998*



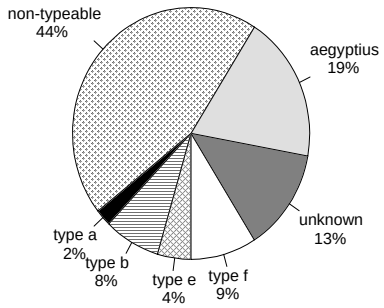
*Excludes Long Beach and Pasadena Data.

HAEMOPHILUS INFLUENZAE INVASIVE DISEASE
TYPE B & OTHER TYPES

CRUDE DATA	
Number of Cases	7
Annual Incidence[a]	
LA County	0.08
California	NA*
United States	0.04
Age at Onset	
Mean	41 yrs
Median	39 yrs
Range	9 mos-80 yrs
Case Fatality	
LA County	0.0%
United States	N/A

Figure 31

H. influenzae Invasive Disease
by Serotype (N=90)
Los Angeles County, 1998



[a] Cases per 100,000 population.

*In 1998, reporting of *H. influenzae* among persons ≥ 30 was not required in California. Rate <30 years old = 0.08.

ETIOLOGY

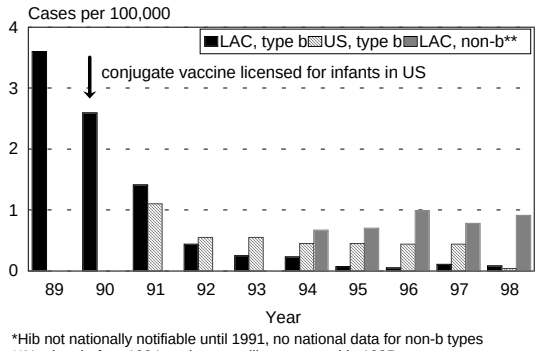
Haemophilus influenzae is a gram-negative coccobacillus. Several serotypes cause invasive disease, but a vaccine is only available against serotype b.

DISEASE ABSTRACT

In 1998, 90 cases of *Haemophilus influenzae* invasive disease were reported. Of these 90 cases, seven were type b. Only two of the seven cases were among children 5 years of age or younger. Before the introduction of effective vaccines against *H. influenzae* type b (Hib), Hib disease was the leading cause of bacterial meningitis and other invasive illness among children less than 5 years of age. The remaining 83 cases of invasive *H. influenzae* disease were non-b and unknown serotypes (Figure 31).

Figure 32

H. influenzae Invasive Disease
Incidence Rates by Year
LAC and US,* 1989-1998



*Hib not nationally notifiable until 1991, no national data for non-b types
**No data before 1994, active surveillance started in 1995

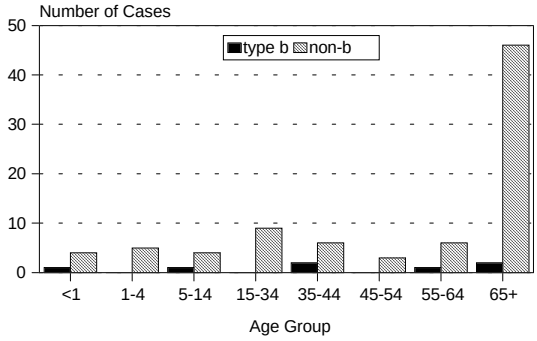
STRATIFIED DATA

Trends: The incidence rate for *H. influenzae* type b of 0.08 cases per 100,000 was slightly less than the previous year's rate of 0.1 cases per 100,000. The incidence of invasive *H. influenzae* type b disease has fallen dramatically in the past 10 years primarily due to the use of Hib vaccine. Incidence rates for other types of *H. influenzae* have remained relatively steady (Figure 32).

Age: Invasive infection with *H. influenzae* type b occurs primarily in infants, young children and the elderly. Most of the cases in 1998 were in those 35 years of age or older (Figure 33).

Figure 33

H. influenzae Invasive Disease
Number of Cases by Age Group
Los Angeles County, 1998



The median age at onset for invasive non-b *Haemophilus* disease was 69 years (range: birth to 96 years) (Figure 33).

COMMENTS

Contacts of reported cases of Hib are investigated and chemoprophylaxis is administered when appropriate. There is no evidence that these measures are effective in controlling non-b serotypes. Present Hib vaccines offer no protection against other *H. influenzae* serotypes.

Non-invasive disease, such as conjunctivitis and respiratory infections, is not investigated or reported, regardless of serotype.

H. influenzae type b

All seven Hib cases had sepsis demonstrated by positive blood culture. Four cases had sepsis without any other symptoms, two had pneumonia (one in conjunction with meningitis) and one had cellulitis. No deaths occurred.

The widespread use of conjugate Hib vaccines has dramatically reduced invasive disease caused by this organism. More than 95% of infants will develop protective antibody levels after a primary series of three doses. However, unvaccinated and some vaccinated persons may continue to become infected. Of the two pediatric cases, one child was fully vaccinated (but had an underlying genetic condition), and the other child's vaccine history was unknown. Children with underlying conditions appear to be more susceptible to the disease even when fully immunized. Overall, four of the seven cases had underlying conditions: Leigh's disease, cerebral palsy, lupus, and liver cancer.

H. influenzae, non-b serotypes

Forty-four percent of *H. influenzae* cases in 1998 were non-typable. This serotype made up 48% of the non-b serotypes.

Most cases (94%) had sepsis. Other infections included pneumonia (n=10), meningitis (n=5), otitis media (n=1), and peritonitis (n=2). Three perinatal infections (sepsis) occurred where the mother was not confirmed with infection. Two of these infants were born prematurely; one of the two died a few hours after birth. Eight cases overall were known to have died: seven elderly, and the previously mentioned newborn.

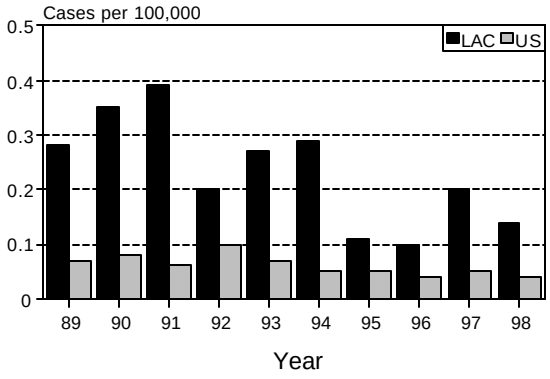
HANSEN'S DISEASE (LEPROSY)

CRUDE DATA	
Number of Cases	13
Annual Incidence[a]	
LA County	0.14
California	0.12
United States	0.04
Age at Diagnosis	
Mean	51
Median	45
Range	24-90 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 34

Hansen's Disease
Incidence Rates by Year of Diagnosis
LAC and US, 1989-1998



ETIOLOGY

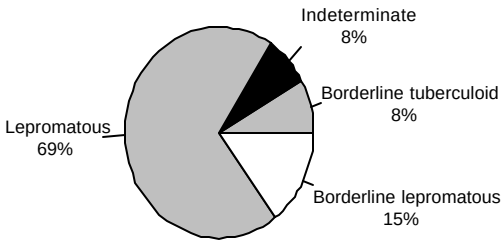
Mycobacterium leprae, an acid-fast gram-positive bacillus.

DISEASE ABSTRACT

The 1998 incidence rate of Hansen's disease decreased from last year. The majority of cases were Hispanic males (40%). In LAC, the lepromatous form of disease is the most common (Figure 35).

Figure 35

Types of Newly Diagnosed Hansen's Disease
Los Angeles County, 1998



STRATIFIED DATA

Trends: The incidence of Hansen's disease declined 30% from 0.20 cases per 100,000 population in 1997 to 0.14 in 1998 (Figure 34).

Age: The average age at the time of diagnosis is 51 years. The highest incidence rate was observed in the 65+ age group (0.47 cases per 100,000 population). Due to insidious progression of disease, onset date of illness is imprecise and may be several years prior to first physician visit.

Sex: The male-to-female rate ratio was 2:1.

Race/Ethnicity: As in previous years, cases were mainly Asians (5 cases) and Hispanics (8 cases) who had emigrated from countries with endemic Hansen's disease. Of the Asian cases, two were from Southeast Asia and three from the Philippines. All Hispanic cases were from Mexico.

Location: All Hansen's disease cases acquired illness outside the US.

Comments: The Acute Communicable Disease Control Unit maintains a Hansen's disease registry of all patients in LAC who are currently receiving or should be receiving medical follow-up for this disease. In 1998, there were a total of 341 Hansen's disease cases under medical care in LAC. Patients are monitored until they (1) no longer require medical supervision, (2) move out of LAC, (3) are lost to follow-up, or (4) die.

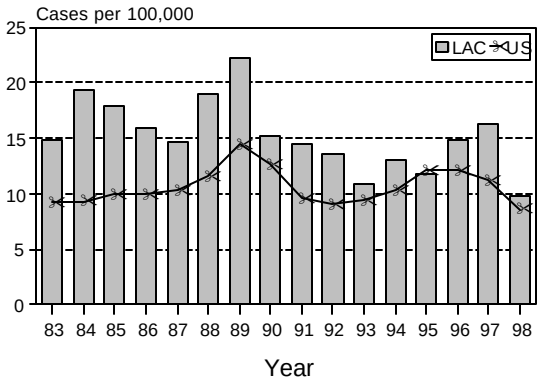
HEPATITIS A

CRUDE DATA	
Number of Cases	888
Annual Incidence[a]	
LA County	9.7
California	12.8
United States	8.6
Age at Onset	
Mean	22.5
Median	14.5
Range	3 mos-95 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 36

Hepatitis A
Incidence Rates by Year
LAC and US, 1983-1998



ETIOLOGY

Hepatitis A virus.

DISEASE ABSTRACT

Hepatitis A is an RNA viral disease usually transmitted by the fecal-oral route. Age, race, and gender each can influence disease incidence. Hepatitis A is the most common etiologic agent of viral hepatitis.

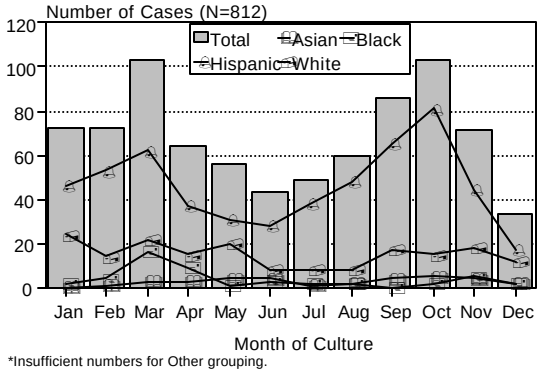
STRATIFIED DATA

Trends: Hepatitis A rates increased steadily in Los Angeles County from 1993 to 1997 but the 1998 hepatitis A crude rate (9.7 per 100,000 population) decreased 40% over the 1997 rate of 16.4 per 100,000. In 1998, LAC rates were more in accordance with the national rate of 8.6 per 100,000 (Figure 36).

Seasonality: With an exception of a peak in March, the increase in hepatitis A cases historically observed in late summer and early autumn was observed again in 1998 (Figure 37). A large portion of this increase was due to

Figure 37

Hepatitis A Cases
by Date of Onset and Race*
Los Angeles County, 1998

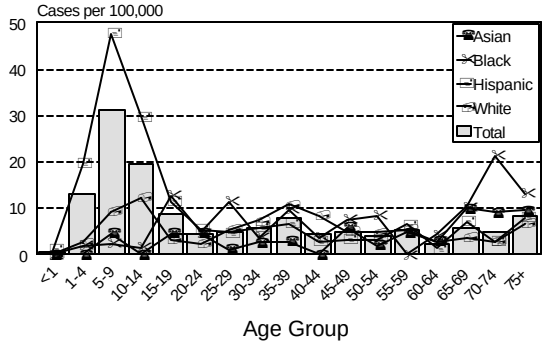


*Insufficient numbers for Other grouping.

the disease occurrence among Hispanics. Cases among Whites and Asians were distributed throughout the year while hepatitis A cases among Blacks peaked early in the year. Small case numbers in the "Other" grouping precluded detailed analysis.

Figure 38

Hepatitis A
Incidence Rates by Age Group and Race
Los Angeles County, 1998



Age: The overall mean age for hepatitis A cases in 1998 was 22.5 years. The mean age for Hispanic cases was 15 years, while Black, White, and Asian cases had means of 35, 36, and 40 years, respectively. The age-specific rate was highest in the 5- to 14-year-olds (27.1 per 100,000 population) mostly due to the incidence of the Hispanic cases (39.9 per 100,000) in that age group. Asian rates peaked in the 65 and older group, (9.5 per 100,000), the White rate peaked in the 35- to 39-year-old group (10.8 per 100,000) while Black incidence peaked in the older 70- to 74-year-old group (21.4 per 100,000) (Figure 38). The increased rates for Blacks and Asians in the older age groups could be a result of a change in methodology for the 1998 population estimates (see Demographic Data section).

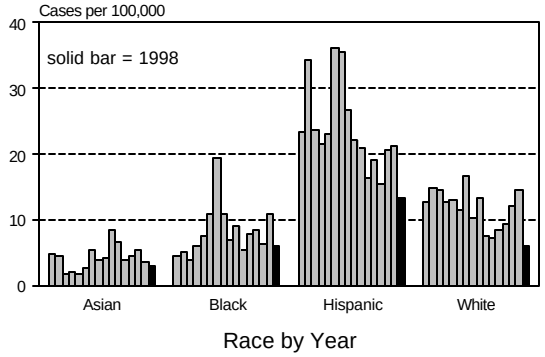
Sex: The overall hepatitis A male-to-female rate ratio was 1.2:1. The gender rate ratio for Asian, White and Hispanic case rates had a higher proportion of males, 1.8:1, 1.7:1, and 1.1:1, respectively. The difference of case rates between males and females for Blacks was minimal.

Race/Ethnicity: The overall crude rates decreased for all races in 1998. The observed highest 1998 rate, as seen in prior years, was among Hispanics. Case frequency among Black, Asian, and Other groups (48, 34, and 3, respectively) limited statistical confidence. The ranking of rates by race/ethnicity did not change from previous years except that Whites and Blacks had similar rates of disease (Figure 39).

Location: Map 5 shows district-specific hepatitis A rates for 1998. The highest rates were in Southeast (30.5 cases per 100,000 population), Northeast (14.8 cases per 100,000 population), Hollywood-Wilshire (13.9 cases per 100,000 population), East Los Angeles (13.6 cases per 100,000 population), Harbor (13.0 cases per 100,000 population), and San Antonio (12.9 cases per 100,000 population) Health Districts.

Figure 39

Hepatitis A
Incidence Rates by Race and Year of Onset
Los Angeles County, 1983-1998



Severity of Illness: Of the cases reported in 1998, 61% reported jaundice and 9% were hospitalized for their illness. No fatalities were reported.

Risk factors (two to six weeks prior to

illness): Recent travel (24%) was the most common risk factor reported by 1998 hepatitis A cases. Of the cases that traveled, 86% (163/190) traveled outside of the United States to South/Central America (including Mexico). Most of the cases traveled for more than seven days (79%). The second most frequently reported factor was contact to a confirmed or suspected hepatitis A case (22%) with the type of contact being reported as 61% household (non-sexual), 8% sexual (most described themselves as heterosexual), and 31% other. Other factors reported in greater than or equal to 5% of the cases were consuming shellfish (7%), being a child or employee of a nursery, day care or preschool (5%), and being a household contact to a child or employee in childcare (5%). Very few individuals reported being a food handler (14), being part of common-source foodborne or waterborne outbreak (12), or using needles for injection of street drugs (6).

PREVENTION

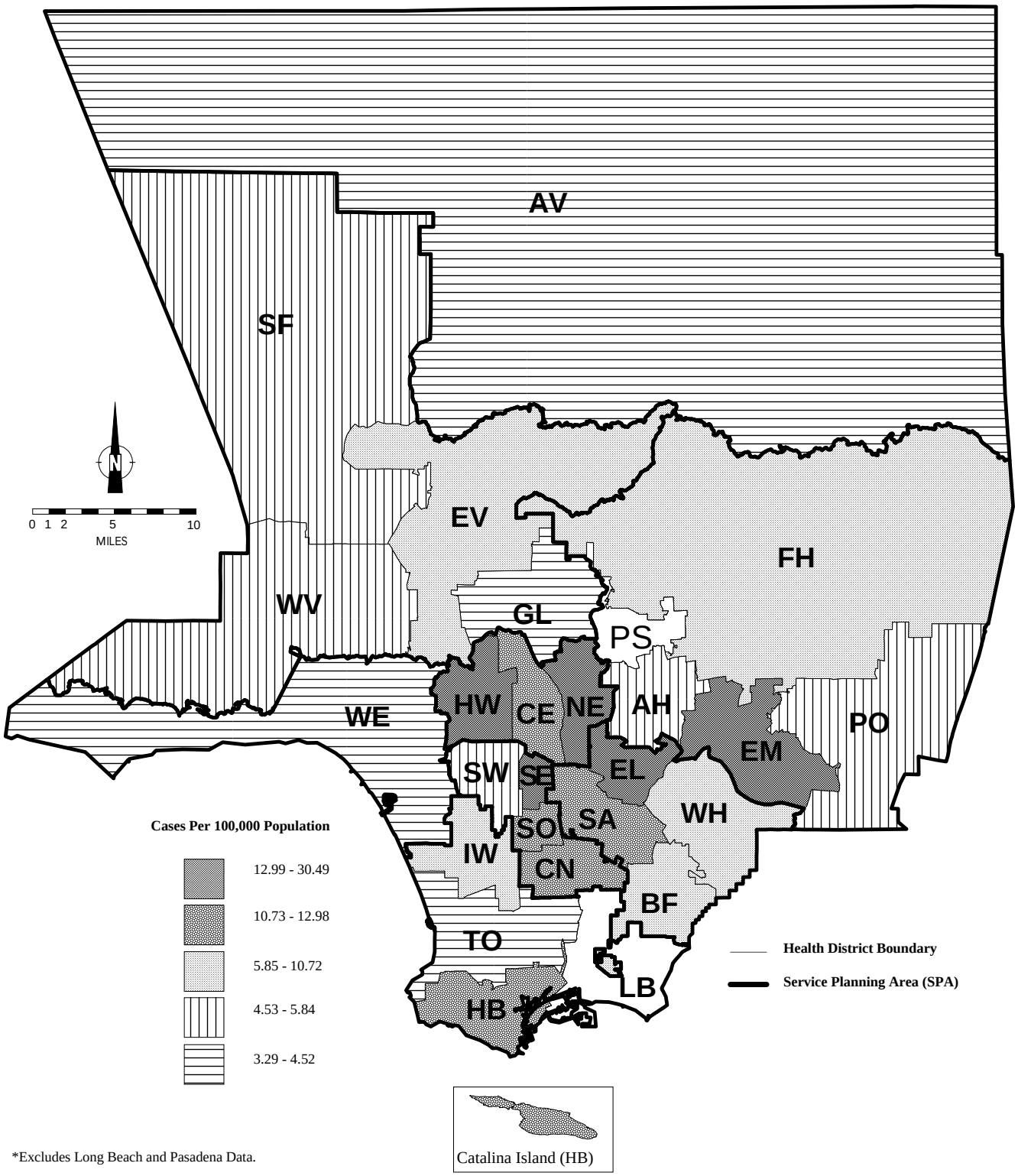
Good hygiene remains the primary preventive measure for hepatitis A. Vaccine for pre-exposure situations has been available since 1995. The vaccine remains a special population group vaccine and widespread usage in community settings has not occurred in LAC although expanded availability and usage is expected for 1999. Immune globulin is used for post-exposure and/or short-term pre-exposure situations; however, availability has been limited. The benefits of hepatitis A vaccine in post-exposure prophylaxis remains unclear.

COMMENTS

There was a dramatic drop in the number of cases for 1998 (888) compared to 1997 (1,546). This decrease may be a result of a special study done on hepatitis A and extra vigilance in cleaning and validating the surveillance records. To examine the effect, we selected a random sample of 102 case reports from 1997 and applied the 1998 case definition to the 1997 cases. For the 1998 data, we used the case definition for hepatitis A produced by the Council of State and Territorial Epidemiologists. Twenty-two percent of the 1997 cases did not fit the 1998 case definition, which at a minimum excludes 340 cases from the 1997 total leaving 1206 cases. However, even using a stricter case definition there still remains a 27% decrease in the frequency of hepatitis A from 1997 to 1998. It should also be noted that a similar unexplained 30% decrease from 1997 to 1998 was also observed in other enterics like salmonellosis, campylobacteriosis, and shigellosis. Under-reporting may be a factor.

MAP 5. Hepatitis A

Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

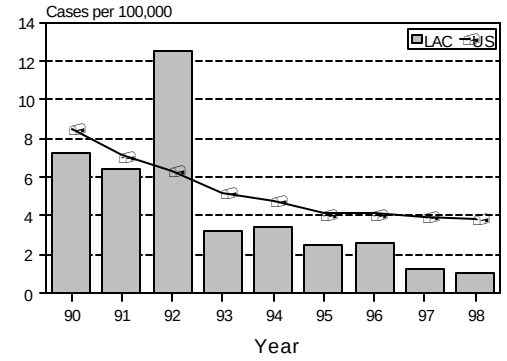
HEPATITIS B

CRUDE DATA	
Number of Cases	92
Annual Incidence[a]	
LA County	1.0
California	4.4
United States	3.8
Age At Onset	
Mean	36
Median	34
Range	8-92 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 40

Hepatitis B
Incidence Rates by Year
LAC and US, 1990-1998



ETIOLOGY

Hepatitis B virus, a DNA-virus of the Hepadnaviridae family.

DISEASE ABSTRACT

There was a dramatic decrease in the number of cases among females, and the overall incidence of hepatitis B continued to decline. There were no reports of perinatal transmission and only seven cases were under 18 years of age.

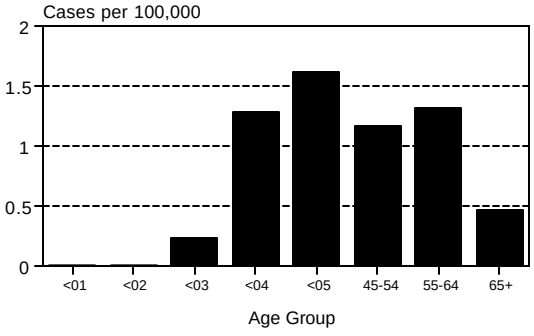
STRATIFIED DATA

Trends: The 1998 rate of hepatitis B (1.0 per 100,000 population) remained low and decreased slightly from the 1997 rate (1.2 per 100,000). The overall downward trend of hepatitis B cases, which began in 1992, continued (Figure 40).

Seasonality: None.

Figure 41

Hepatitis B
Incidence Rates by Age Groups
Los Angeles County, 1998



Age: Of 92 cases of hepatitis B, most were in adults under the age of 45 (n=64). Forty-nine percent of cases were aged 15 to 34 years. Rates were highest in those aged 35 to 44 years (1.62 per 100,000) followed by those aged 15 to 34 years (1.29 per 100,000)(Figure 41).

Sex: Most cases were in males (n=72). The number of cases was highest in Hispanic males (n=24), followed by White (n=20), Black (n=13) and Asian (n=9) males. The number of cases among females ranged between three and five in all ethnic groups. The overall male-to-female rate ratio was 3.6:1, an increase of 100% over the 1997 ratio (1.8:1). Although hepatitis B has historically been a predominately male disease, the reason for the increase in the male-female ratio in 1998 is not clear.

Race/Ethnicity: The highest rates were seen in Blacks (2.15 per 100,000) followed by Asians (1.28 per 100,000).The highest number of cases occurred in Hispanics (n=27) and Whites (n=23) (Figure 42).

Location: Rates were highest in Hollywood-Wilshire, South, and Central Health Districts, with 4.5, 2.3 and 2.0 cases per 100,000 population, respectively (Map 6).

Figure 42

Hepatitis B
Number of Cases by Age Group and Race
Los Angeles County, 1998

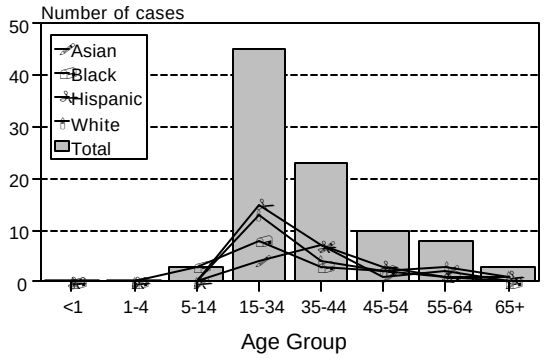
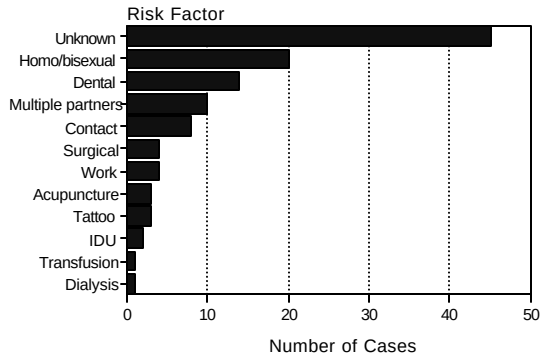


Figure 43

Identified Risk Factors
Hepatitis B in Los Angeles County,1998



COMMENTS

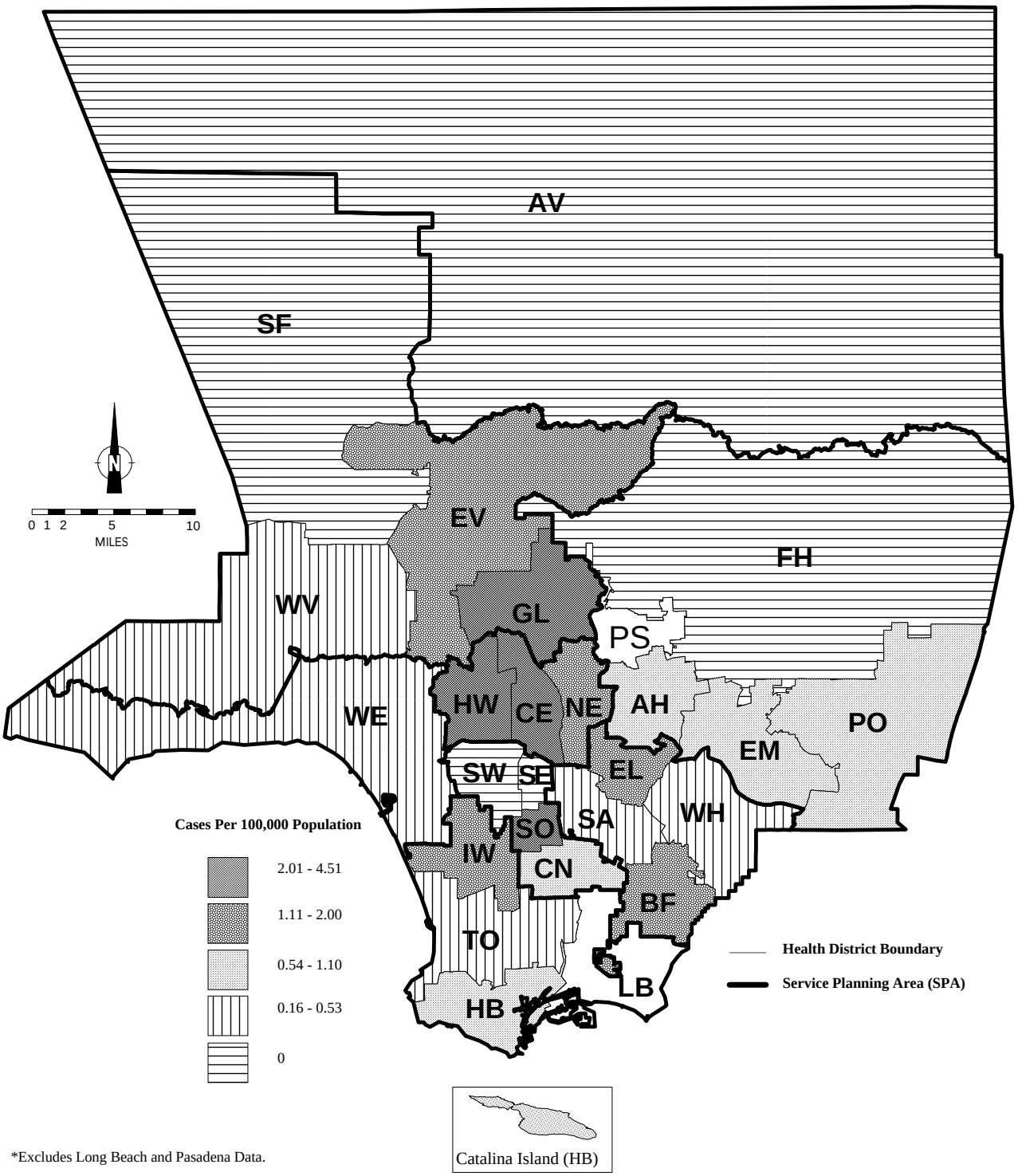
Decreasing rates of acute hepatitis B since 1992 in those under age 15 suggest that the strategy to reduce hepatitis B among infants and children through prophylaxis of newborns of chronic carrier mothers and universal hepatitis B immunization of all infants is succeeding. However, risk modification education efforts aimed at reducing AIDS and other bloodborne illness, including hepatitis, that were successful earlier this decade seem to have lost their effectiveness. New strategies are needed to reduce high-risk behaviors and provide resources for low-cost hepatitis B immunization for all, but particularly for younger adults with the highest rates of transmission. Development and implementation of such strategies is possible through collaboration between public health, community-based organizations, and other agencies that serve the target population.

Currently, there are significant barriers for adequate and complete testing of people suspected of having hepatitis B, as well as for the timeliness and accuracy of reporting and classification of cases. Corrections to current procedural terminology (CPT) codes, to ensure that additional tests

are done when appropriate, are scheduled to take effect in 2000. Progress has been made towards simplification and enhancements to reporting. Timely information about reporting requirements, revised criteria for definition of an acute case of hepatitis B, and other relevant issues are periodically presented in the *Public Health Letter*.

MAP 6. Hepatitis B

Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

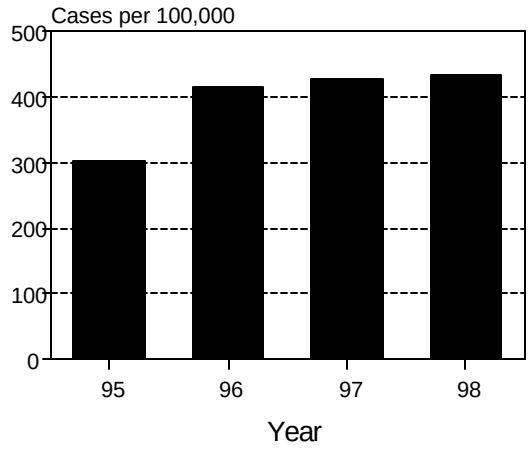
PERINATAL HEPATITIS B PREVENTION PROGRAM

1998 CRUDE DATA	
Number of Infants Born to HBsAg-Positive Mothers	741
Annual Incidence[a]	
LA County	433
California	NA
United States	NA
Age of Mother at Time of Infant's Birth	
Mean	31
Median	31
Range	17-48 yrs
Case Fatality	
LA County	0.0%
United States	NA

[a]Incidence based on number of infants born to HBsAg-positive mothers per 100,000 live births.

Figure 44

Infants Born to HBsAg-Postive Mothers
Incidence Rates by Year
LAC, 1995-1998



In 1995, case management services were expanded. Data prior to this is not shown.

ETIOLOGY

Hepatitis B virus (HBV).

DISEASE ABSTRACT

The Immunization Program's Perinatal Hepatitis B Prevention Program (PHBPP) conducts case management follow-up activities of hepatitis B surface antigen (HBsAg)-positive pregnant women, their newborns and household contacts.

STRATIFIED DATA

Trends: The incidence of infants born to HBsAg-positive mothers increased slightly from 427 per 100,000 infants born in 1997 to 433 per 100,000 infants born in 1998 (Figure 44). Immunoprophylaxis (hepatitis B immunoglobulin [HBIG] and the three-dose hepatitis B vaccine [HBVac] series) completion rates increased from 91% in 1997 to 94% in 1998.

CASES REPORTED FOR FOLLOW-UP IN 1998

In 1998, 850 HBsAg-positive prenatal women were reported to the PHBPP for case management follow-up. Reports came in from clinical laboratories, delivery hospitals, and health care providers**.**

Countries of Origin: Seven hundred thirty-five (86%) of the 850 HBsAg-positive pregnant women were born outside of the United States; of these women, 637 (87%) were born in areas of the world with high or intermediate levels of endemic hepatitis B disease. Endemic areas of origin included Asia, Middle East, Africa, Eastern Europe, former USSR, South Pacific Islands, India, Honduras, Guatemala, Peru, Bolivia and Brazil. The remaining 98 (13%) were from countries where hepatitis B is of low endemicity, such as Mexico, El Salvador, Colombia, Nicaragua, Germany and France. The majority of the HBsAg-positive women reported 479 (56%) had a primary language other than English.

Race/Ethnicity: In 1998, 602 (71%) of the HBsAg-positive pregnant women were Asian/ Pacific Islander (API), 130 (15%) were Hispanic, 65 (8%) were Black and 53 (6%) were White. Of the 602 API women, 270 (45%) were Chinese, 103 (17%) Vietnamese, 88 (15%) Filipino, 67 (11)% Korean, 20 (3%) Cambodian, 14 (2%) Thai, 11 (2%) Samoan, and 29 (5%) other API.

CASES COMPLETED FOR FOLLOW-UP IN 1998

In 1998, case management was completed for 557 women, their newborns, and household contacts. Forty-four mothers were excluded (21 mothers miscarried, 11 moved out of LAC prior to delivery, and 12 were retested and found to be HBsAg negative). The mean time for completing case follow-up was 10 months. Case management protocol includes (1) educating pregnant HBsAg-positive women about HBV disease, transmission, and infant vaccinations, (2) identifying and referring household contacts for screening and vaccination, (3) notifying hospitals of the expected deliveries and requesting that the hospitals return documentation after the infant's birth with the dates and times of the administration of HBVac #1 and HBIG, (4) notifying the infant's health care provider about the need for HBVac #2 at 1-2 months and HBVac #3 at 6 months of age, (5) reminding parents about these needed vaccinations, and (6) sending postvaccination serology letters to pediatric health care providers.

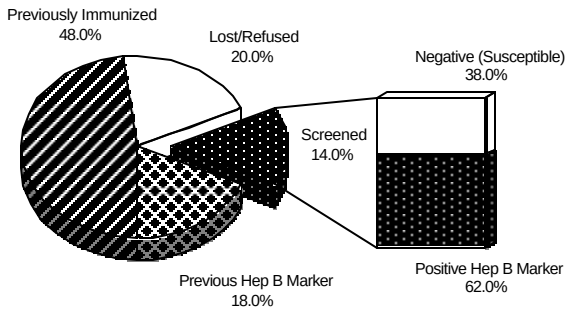
Infant Immunoprophylaxis Completion Rates: A total of 561 infants (including 4 sets of twins) were born to 557 mothers, 97**%** of who received HBVac#1 and HBIG within 24 hours of birth. Of these infants, 30 moved out of the country before 6 months of age, leaving a total of 531 infants who were eligible to complete the hepatitis B vaccine series. Of these 531 remaining infants, 94% (498) received HBIG and a complete three-dose series of hepatitis B vaccine (Table 3).

Table 3. Summary of Infant Hepatitis B Immunoprophylaxis
Los Angeles County, 1998

Hepatitis B Immunoprophylaxis	Number of Infants	Number of Eligible Infants	Percent
Infants who received HBVac#1 within 24 hours of birth	549	561	98%
Infants who received HBIG within 24 hours of birth	548	561	98%
Infants who completed HBIG/3-dose HBVac series	498	531	94%

Household and Sexual Contacts Completion Rates: A household contact was defined as an individual with anticipated continuous household exposure for greater than one year (often limited to nuclear family). Of 955 household and sexual contacts identified, 457 (48%) had already been vaccinated against hepatitis B. The majority (81%) of the previously immunized were #18. One hundred sixty-nine (18%) were known to have serologic evidence of hepatitis B infection of who 40 (24%) had been previously identified by prior case management. Of the remaining 329 (35%) contacts, 138 were screened for serologic evidence of hepatitis B infection or immunity, and 191 (20%) refused screening or vaccination or were lost to follow-up. Of the 138 household contacts who were serologically screened, 85 (62%) had positive markers for hepatitis B and therefore did not need vaccine (Figure 45). Fifty-three (38%) of the screened household contacts were seronegative, i.e., susceptible to hepatitis B infection. At the time of completion of case management for the HBsAg-positive mother, 49 (93%) of the susceptible household contacts had completed all three doses of hepatitis B vaccine.

Figure 45
Household Contacts of Perinatal Hepatitis B Cases
Los Angeles County,Cases Closed 1998 (N=955)



Post-vaccination Serology Results: Post-vaccination serology testing of infants born to HBsAg-positive mothers is recommended three to nine months after completing immunoprophylaxis to verify vaccine failure or success. In 1998, letters requesting post-vaccination serology results were mailed to pediatric health care providers of infants tracked by the PHBPP. The post-vaccination serology results of 172 infants were received. Of these, 164 (95.3%) had antibodies to hepatitis B surface antigen indicating protection against HBV. Seven (4%) were HBsAg positive only, and were infected; one (0.5%) was negative for both markers and revaccination was recommended**.**

COMMENTS

The mission of the PHBPP is to prevent perinatally transmitted hepatitis B within LAC. Vaccination and one dose of HBIG, administered within 24 hours after birth, are 85%-95% effective in preventing both hepatitis B virus infection and the chronic carrier state. By preventing the chronic carrier state, the vaccine also protects against long-term complications such as cirrhosis or liver cancer.

HEPATITIS C

CRUDE DATA	
Number of Cases	8
Annual Incidence[a]	
LA County	0.09
California	1.46
United States	1.12
Age at Onset	
Mean	36.1 yrs
Median	29 yrs
Range	25-62 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

ETIOLOGY

Hepatitis C and possibly other hepatotrophic viruses.

DISEASE ABSTRACT

Non-A, non-B hepatitis refers to a reporting category of viral hepatitis which excludes infection with types A and B hepatitis viruses and other known causes of liver disease. In the US, most cases of non-A, non-B are caused by the hepatitis C virus (HCV) which is predominantly transmitted by blood-to-blood contact. HCV infection is often mild or inapparent in its acute stage, but chronic liver disease with persistent hepatitis C antibodies occurs in the majority of infections. The formation of hepatitis C antibodies does not confer immunity because of the spontaneous appearance of multiple HCV quasi species. Sexual and perinatal transmission of HCV appears to occur infrequently; however, the epidemiology of hepatitis C is still being elucidated.

During 1998, a total of 3,670 both chronic and acute HCV case reports (primarily anti-HCV positive tests) were received. This represents a 12.9% increase in reported cases compared to 1997 (N=3,250) and a 61% increase since 1995 (N=2,013). For 1998 cases, an acute case was defined as an individual with a positive anti-HCV (antibody test) or HCV virus detected by polymerase chain reaction (PCR), and evidence of jaundice or alanine aminotransferase (ALT) greater than 2.5 times the upper limit. In 1998, only eight cases met the case definition from review of 331 epidemiologic case records coded as acute. This compares with 23 acute cases identified in 1997 utilizing a less stringent case definition. Five cases were Hispanic males and three were non-Hispanic White males, with a median age of 26 years. Five cases reported receiving tattoos within the previous three months while incarcerated or in a residential drug treatment program, one case had a history of illicit drug and alcohol abuse, and the source of infection was unknown for two cases. Cases incarcerated in a State prison were likely overrepresented as an aggressive admission and follow-up HCV screening program was in place. The only other organized HCV screening program in LAC

occurred within the Veteran's Administration healthcare system.

DATA LIMITATIONS

Due to the unusually mild acute stage of hepatitis C infection, an individual is often first identified during the chronic stage of illness. The 1998 increase in reported acute hepatitis C cases probably was due to a misclassification of reported serologically positive anti-HCV chronic cases rather than a true change in the epidemiology of hepatitis C. In recent years, laboratories have been encouraged to report hepatitis-positive laboratory results. Although anti-HCV reporting is not required, positive results are often reported. Incoming reports are classified as suspect acute cases. Unfortunately, these initial reports may remain in the system as acute, even when the majority of subsequent investigations determine the case to be a chronic infection. Also,10-40% of the anti-HCV reports positive by enzyme immunoassay (EIA) may be falsely reactive; the highest false- positive rate occurs among individuals at low risk for infection. Results of confirmatory tests such as the recombinant immunoblot assay (RIBA) or HCV-RNA are rarely reported.

Since 1995, yearly increases in reports are likely the result of (1) the CDC's recommendation that individuals transfused prior to 1992 be screened for HCV; (2) the Food and Drug Administration's targeted look-back program which traced HCV-positive donors to recipients as far back as 1988; (3) increased public awareness via media coverage; and (4) increased pressure from special interest groups such as HIV-infected individuals, individuals in drug treatment programs and drug company advertising efforts.

PREVENTION

Reduction of high-risk behaviors is the chief means of preventing hepatitis C. Education aimed at reducing high-risk behaviors for hepatitis B and HIV transmission such as injection drug use should have additional benefit in reducing hepatitis C cases. The CDC is currently funding controlled studies looking at body tattooing as an independent risk factor for acquisition of HCV infection. Serologic testing of blood products continues to keep the risk of transfusion-associated hepatitis C low. Both alcohol consumption and co-infection with HIV accelerate the progression of cirrhosis and hepatocellular carcinoma. As such, additional funding is necessary to study the feasibility of incorporating HCV screening, counseling, diagnosis, treatment and administration of hepatitis A and hepatitis B vaccine in drug treatment and HIV screening and treatment sites.

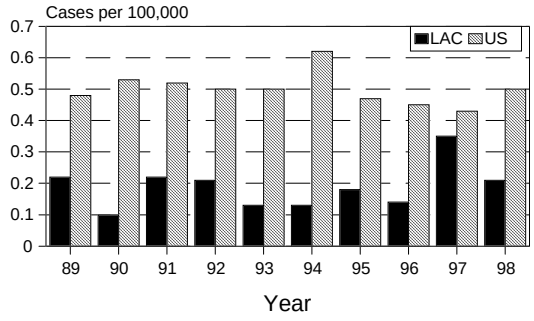
LEGIONELLOSIS

CRUDE DATA	
Number of Cases	19
Annual Incidence[a]	
LA County	0.21
California	0.16
United States	0.50
Age at Onset	
Mean	64
Median	66
Range	25-86 yrs
Case Fatality	
LA County	16%
United States	N/A

[a]Cases per 100,000 population.

Figure 46

Legionellosis
Incidence Rates by Year
LAC and US, 1989-1998



ETIOLOGY

Eleven species of *Legionella* have been implicated in human disease, but most infections are caused by *Legionella pneumophila* serogroup 1 (Lp1).

DISEASE ABSTRACT

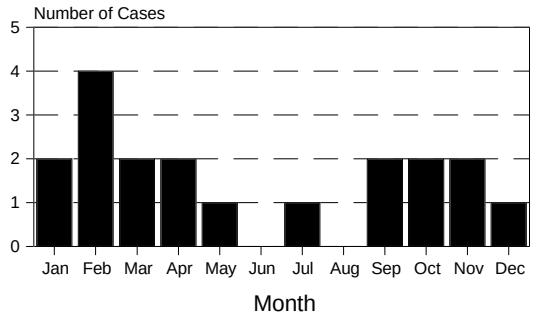
All reported cases of legionellosis in 1998 were due to sporadic, community-acquired legionella pneumonia (Legionnaires' disease); there were no cases of Pontiac fever. Reported cases decreased 41%, following an all-time high in 1997 associated with a small community cluster (Figure 46).

SUMMARY OF EPIDEMIOLOGIC DATA

The average age of reported cases was 64 years (range 25-86 years); 8 were males and 11 were females. The distribution of cases by race/ethnicity was 1 Asian, 3 Black, 2 Hispanic, and 13 White. The summer and autumn seasonality commonly associated with legionellosis was not observed in 1998 (Figure 47).

Figure 47

Legionellosis
Cases by Month of Onset
Los Angeles County, 1998

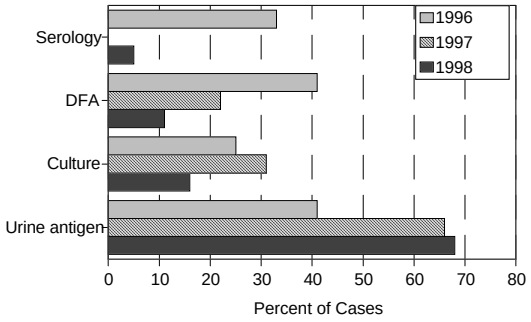


Laboratory confirmation of Legionnaires' disease included isolation of *Legionella* from respiratory secretions for 3 (16%) cases, detection of *Legionella* in respiratory secretions by direct fluorescent antibody testing for 2 (11%) cases, and demonstration of Lp1 antigen in urine for 13 (68%) cases (Figure 48).

Nearly all case-patients (95%) had one or more recognized risk factors for Legionnaires' disease, including heavy cigarette use and/or chronic pulmonary disease (8 cases), malignancy (2), diabetes (3), immunodeficiency syndromes (4), or advanced age (5 cases 80 years or older).

Figure 48

Legionellosis
Laboratory Methods* Used for Diagnosis
Los Angeles County, 1996-1998



*Some cases were laboratory-confirmed by more than one method.

COMMENTS

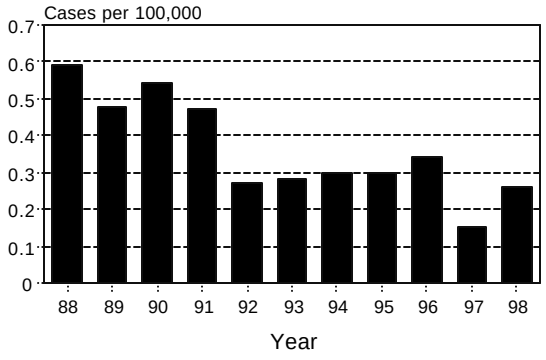
The reported incidence of legionellosis in LAC remains lower than the national rate of 0.43 cases per 100,000 population. Empiric antibiotic therapy for community-acquired pneumonia and inappropriate diagnostic testing may contribute to lower than anticipated rates. In September 1996, the use of a single elevated convalescent serum antibody titer was excluded from the surveillance case definition for legionellosis because of poor specificity. In 1998, 16 potential cases were excluded because of failure to meet laboratory criteria of the revised case definition. The increase since 1996 in the use of urinary antigen testing, a sensitive, specific alternative to culture for identification of Lp1, suggests that efforts to educate health care providers in the appropriate use of diagnostic tests for legionellosis are having some effect.

LISTERIOSIS, NONPERINATAL

CRUDE DATA	
Number of Cases	24
Annual Incidence[a]	
LA County	0.26
United States	N/A
Age at Onset	
Mean	63
Median	71
Range	10-86 yrs
Case Fatality	
LA County	21%
United States	N/A

[a]Cases per 100,000 population.
N/A - not available.

Figure 49
Nonperinatal Listeriosis
Incidence Rates by Year
Los Angeles County, 1988-1998



ETIOLOGY

Listeria monocytogenes, a gram-positive bacterium.

DISEASE ABSTRACT

Nonperinatal listeriosis usually manifests itself as meningoencephalitis and/or septicemia. It affects elderly and immunocompromised persons, such as those afflicted with cancer or HIV, and those on immunosuppressive therapy.

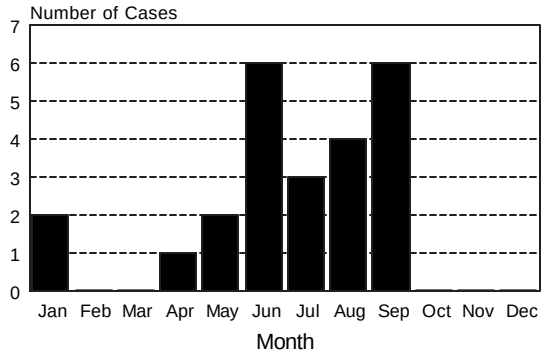
STRATIFIED DATA

Trends: After a considerable drop in 1997 the incidence of nonperinatal listeriosis in 1998 (0.26 cases per 100,000) continued on a similar level as in the 5 years prior to 1997 (Figure 49).

Seasonality: Consistent with prior years, more reported cases occurred in summer than in any other season (Figure 50).

Age: Sixty-seven percent of cases were older than 65 years resulting by far in the highest rate for nonperinatal listeriosis (2.51 per 100,000 population). This is 10 times the rate of 45- to 54-year-old age group (0.23 per 100,000; Figure 51).

Figure 50
Nonperinatal Listeriosis
Cases by Month of Onset
Los Angeles County, 1998



Sex: The male-to-female rate ratio was 1:0.8.

Race/Ethnicity: In 1998, Whites had the highest incidence rate of nonperinatal listeriosis (0.47 per 100,000 population). Blacks had the second highest rate (0.25 per 100,000), followed by Asians (0.18 per 100,000) and Hispanics (0.15 per 100,000; Figure 52).

Location: Glendale Health District had the highest rates (1.2 per 100,000), followed by West and Southeast Health Districts (0.79 and 0.64 per 100,000, respectively).

Figure 51

Nonperinatal Listeriosis
Incidence Rates by Age Group
Los Angeles County, 1998

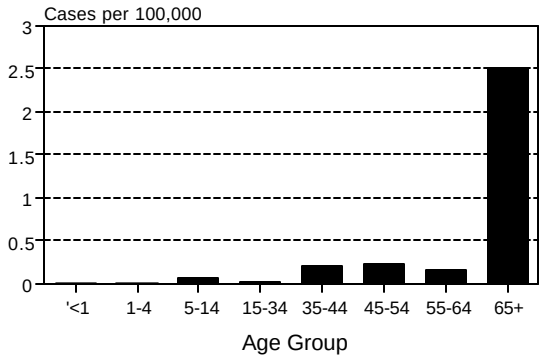
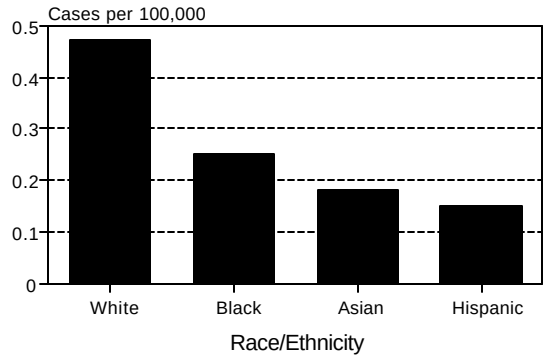


Figure 52

Nonperinatal Listeriosis
Incidence Rates by Race/Ethnicity
Los Angeles County, 1998



Predisposing Conditions and Medical Risk Factors: Sixteen of 24 cases (67%) were older than 65 years of age, 9 (38%) had received antibiotics prior to the onset of listeriosis, 8 (33%) had cancer, 4 (17%) had kidney disease, and 3 each (13%) had diabetes, an autoimmune disease or were on steroid therapy (Table 4). Four (17%) had no identified risk factors.

Outcome: Five of 24 cases in 1998 died for a case-fatality ratio of 21%.

Culture Sites: *Listeria monocytogenes* was isolated in blood (n=19 [79%]) and cerebrospinal fluid (n=5 [21%]).

COMMENTS

In 1990, the FDA instituted a policy that meat products must not harbor any Listeria bacteria ("zero-tolerance"). In subsequent years, we have seen a continuous decline in nonperinatal listeriosis. Consistent with previous years, the majority of nonperinatal listeriosis cases had predisposing factors or medical risk factors, such as old age, prior antibiotic therapy or cancer. The 1998 multistate outbreak of listeriosis associated with hot dogs did not affect Los Angeles County.

Table 4. Predisposing Factors in Cases of Nonperinatal Listeriosis, Los Angeles County, 1998

Medical Condition[a]	Number(N=24)	Percent
Age > 65 years	16	67
Prior antibiotic use	9	38
Cancer	8	33
Kidney disease	4	17
Steroid use	3	12
Autoimmune disease	2	8
Diabetes	1	4
No identified risk factors	4	17

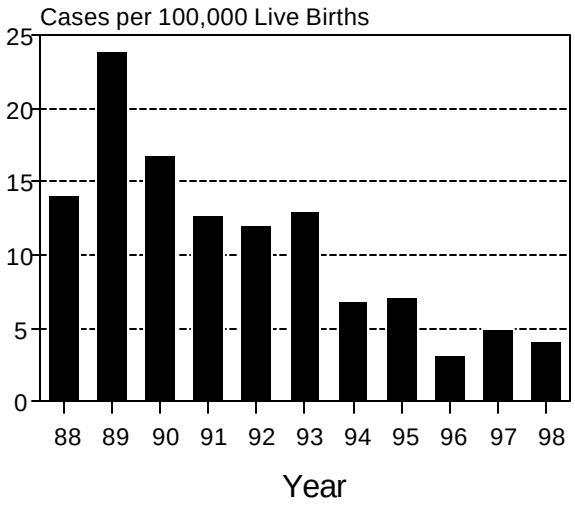
[a]Each case may have more than one underlying medical condition.

LISTERIOSIS, PERINATAL

CRUDE DATA	
Number of Cases	7
Annual Incidence[a]	
LA County	4.2
United States	N/A
Age at Onset (Maternal)	
Mean	25
Median	26
Range	16-33 yrs
(Infant Gestational)	
Mean	25
Median	26
Range	12-38 wks
Case Fatality[b] (n=4)	
LA County	25%
United States	N/A

Figure 53

Perinatal Listeriosis
Incidence Rates by Year
Los Angeles County, 1988-1998



[a] Cases per 100,000 live birth

[b] Denominator= babies with known outcome; stillborn fetuses are removed from the numerator and denominator.

ETIOLOGY

Listeria monocytogenes is a gram-positive bacterium.

DISEASE ABSTRACT

A perinatal listeriosis case is defined as a pregnant woman or her fetus or neonate with infection of a sterile site with *Listeria monocytogenes.* Neonatal listeriosis is divided into early onset (0-6 days after birth) and late onset (more than 6 days to 42 days after birth). The fetus may be stillborn, born with septicemia, or develop meningitis in the neonatal period, even if the mother is asymptomatic.

STRATIFIED DATA

Trends: The 1998 perinatal listeriosis incidence rate (4.19 per 100,000 live births) is about the same compared to 1997, and stayed relatively low since 1994. It still is approximately half as high compared to the higher incidence years between 1987 and 1993 (13 per 100,000; Figure 53).

Seasonality: There were too few cases to look for seasonality.

Age: Perinatal listeriosis incidence was greatest among women aged less than 20 years old (17.1 per 100,000 live births), followed by the 30- to 34-year-old women (7.8 per 100,000 live births; Figure 54).

Sex: The gender of four infants were known; three were female, and one was male.

Race/Ethnicity: Among all races, Whites had the highest disease rate (9.8 per 100,000 live births), followed by Hispanics (4.1 per 100,000 live births). No perinatal listeriosis was reported for Black and Asian women (Figure 55).

Location: The seven perinatal cases came from six different health districts.

Type of Delivery: In four of the perinatal cases where the method of delivery was known, all were vaginal.

Outcome: One fetus was stillborn, one infant died after delivery, and three survived. Two had an unknown outcome.

Culture Sites: Sites of *Listeria monocytogenes* isolation were blood (80% for both mother and infant/fetus), placenta (20% in mother) and trachea (20% in infant; Table 5).

Late Onset: In 1998, there was no case classified as a late-onset case.

Figure 54
Perinatal Listeriosis
Incidence Rates by Age Group of Mother
Los Angeles County, 1998

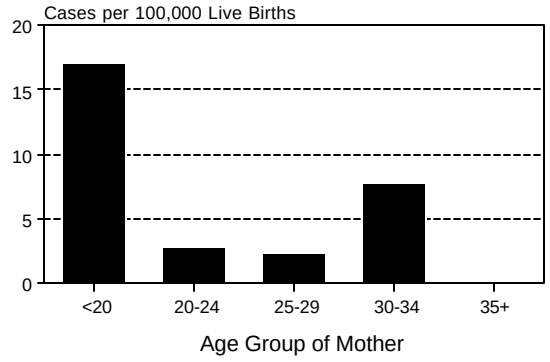
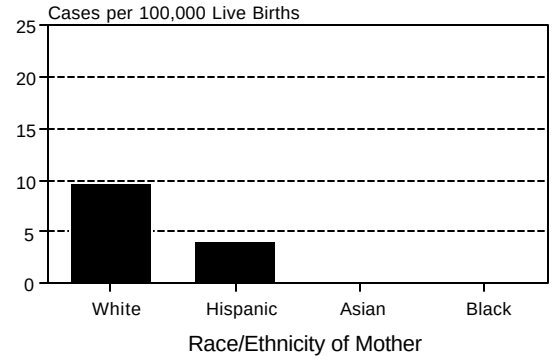


Figure 55
Perinatal Listeriosis
Incidence Rates by Race/Ethnicity of Mothe
Los Angeles County, 1998



COMMENTS

Perinatal listeriosis continues to decline in LAC. This may be attributed to both reduced risk behavior of mothers due to successful prevention strategies (information leaflets to prenatal clinics) and reduced exposure due to the zero-tolerance rule for meat products since 1990.

PREVENTION

Listeria monocytogenes is found in soil and water. Animals can carry Listeria without appearing ill, which can result in contaminated foods of animal origin, such as meats and dairy products. In particular, studies have implicated unpasteurized milk or products made from unpasteurized milk, such as soft cheeses (Mexican-style, Brie, Feta), cold cuts from deli counters, undercooked meat, e.g. chicken, paté, and pork tongue in jelly. These foods should be avoided by pregnant women; fruits and vegetables should be thoroughly washed. Cheese sold by street vendors or obtained from relatives or friends in other countries where food processing quality assurance is unknown especially should be avoided by pregnant women.

Table 5: Frequency (%)[a] of *Listeria monocytogenes* Isolates from Mothers and Infants, Los Angeles County, 1998

Culture Site	Mother (n=7) Number	Percent	Infant (n=7) Number	Percent
Blood	4	80	4	80
Placenta	1	20	0	0
Trachea	0	0	1	20
Unknown	2	-	2	-

[a] Percentages may exceed 100% as cultures were obtained from more than one site in some cases.

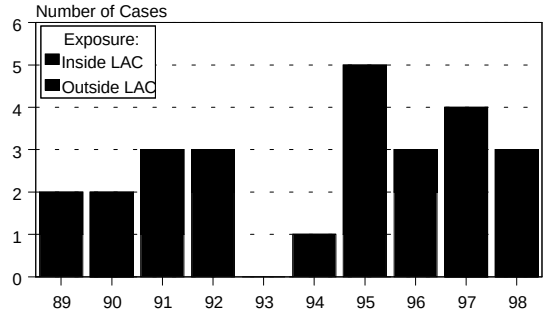
LYME DISEASE

CRUDE DATA	
Number of Cases	3
Annual Incidence[a]	
LA County	0.03
California	N/A
United States	N/A
Age at Onset	
Mean	46.7
Median	51
Range	18-71 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 56

Lyme Disease
Number of Cases by Year
Los Angeles County, 1989-1998



*This graph includes Lyme cases not reported during the year of onset.

ETIOLOGY

Lyme disease is caused by a bacteria, *Borrelia burgdorferi*, transmitted to humans by the bite of the western black-legged tick (*Ixodes pacificus*).

DISEASE ABSTRACT

A distinctive rash (erythema migrans) is present in only 50 to 70% of patients, usually at the site of the tick bite. The diagnosis of Lyme disease may be difficult because early symptoms of fever, body aches, headaches, and fatigue can be caused by other diseases. Although laboratory tests are available, they are often not accurate or consistent.

Lyme disease may be cured by early diagnosis and treatment with antibiotics. Untreated disease causing long-term illness and complications is uncommon.

Lyme disease is reported infrequently in Los Angeles County (LAC). Since Lyme disease became reportable in 1989, 30 reported cases have met the CDC surveillance criteria. Only eight cases (27%) were exposed to ticks inside LAC. Although transmission of Lyme disease

Figure 57

Lyme Disease

- Since 1989, eight confirmed cases* of Lyme disease appear to have been transmitted in Los Angeles County.
- Collection and testing of ticks and reservoir animals for *B. burgdorferi* have been conducted since 1989.

*Cases are defined as those meeting CDC surveillance criteria.

may occur in LAC, it is believed to be rare because the western black-legged tick is not the most commonly found tick in LAC, and only 1-2% of western black-legged ticks in California are infected with the bacterium that causes Lyme disease. The tick must also be attached for 24-48 hours for transmission to occur. Although DHS has been testing ticks and reservoir animals for the past ten years, they have not been confirmed to carry *B. burgdorferi* by culture. However, both Orange and San Bernardino Counties have had ticks with positive cultures.

In 1998, three reported cases of Lyme disease met CDC surveillance criteria. Two of three cases were male. All three cases reported exposure outside LAC.

COMMENTS

When a case of Lyme disease is reported to the Department of Health Services, an investigation is initiated by the Acute Communicable Disease Control Unit which includes collection of information from the physician and the patient. Vector Management staff determine the probable site of tick exposure and initiate field studies. The field studies include collection of ticks and samples from animals to test for Lyme disease.

Although Lyme disease occurs rarely in LAC, personal protective measures can be taken to prevent tick bites. These measures include using insect repellents containing DEET, wearing long pants and long-sleeved clothing, wearing light-colored clothing (so that ticks can be spotted more easily), and walking in the center of a trail to avoid overhanging grass or brush.

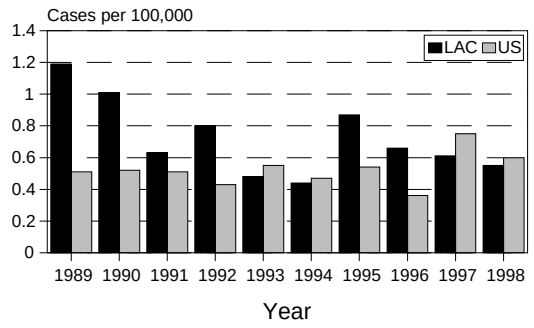
MALARIA

CRUDE DATA	
Number of Cases	50
Annual Incidence[a]	
LA County	0.61
California	1.26
United States	0.75
Age at Onset	
Mean	36
Median	36
Range	4-78 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 58

Malaria
Incidence Rate by Year
LAC and US, 1989-1998

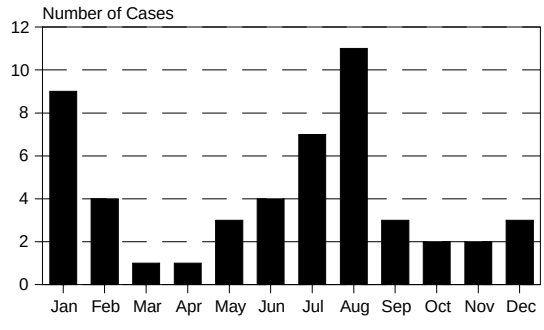


ETIOLOGY

Human malaria is caused by four species of the genus *Plasmodium*: *P. vivax*; *P. falciparum*; *P. malariae*; and *P. ovale*. Malaria is acquired from the bite of an infective female *Anopheles* mosquito.

Figure 59

Malaria
Cases by Month of Onset
Los Angeles County, 1998



DISEASE ABSTRACT

The incidence rate of malaria in Los Angeles County (LAC) decreased slightly in 1998 (Figure 58). Foreign travel by US residents increased as a risk factor from 1997 to 1998, climbing from 56% to 78% of cases. This was especially true for travel to Africa, which was responsible for just 18% of 1997 cases but 61% of cases reported in 1998 (Table 6).

STRATIFIED DATA

Seasonality: Malaria is not transmitted locally. However, travel to and from endemic areas during the northern hemisphere's summer may account for the higher number of cases reported in the summer and early winter (Figure 59).

Age: Malaria incidence was greatest among adults aged 55-64 years (Figure 60). Except for infants under 1 year of age, all groups below 45 years old had lower rates than the previous year.

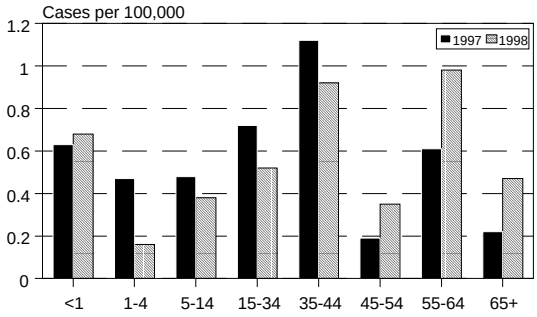
Sex: The rate ratio of male-to-female cases was 2.3:1.

Race/Ethnicity: Malaria incidence (both for total cases and LAC residents) was highest among African nationals/Black Americans and Whites (Figure 61). All Asian and White cases were US residents traveling abroad; one third of Black cases (6 of 19) were African nationals.

Location: The Inglewood and West Valley Health Districts each had five residents acquire malaria; 8 of these 10 cases traveled for pleasure and did not avail themselves of prophylaxis prior to travel.

Figure 60

Malaria
Incidence Rates by Age Group
Los Angeles County, 1997-1998



COMMENTS

Transmission of malaria locally, excluding congenital transmission and an occupationally acquired case, has not been documented in LAC since 1949.

Incidence rates that include cases among immigrants and foreign nationals overestimated the risk to local residents. Residency and/or reason for travel were available on 49 of the 50 malaria cases. Thirty-eight (78%) were LAC residents who traveled abroad either for work (13, 28%) or pleasure (23, 49%), and 11 (23%) were foreign nationals or new immigrants (Table 6).

Among malaria cases in US residents traveling abroad, Africa was the most common region visited (23, 61%), and Nigeria the most frequent destination (12, 52%). For cases among recent immigrants or visitors to the US, Nigeria was also the most common country of origin (4, 36%) (Table 6).

Figure 61

Malaria
Incidence Rates by Race/Ethnicity
and Residency Status
Los Angeles County, 1998

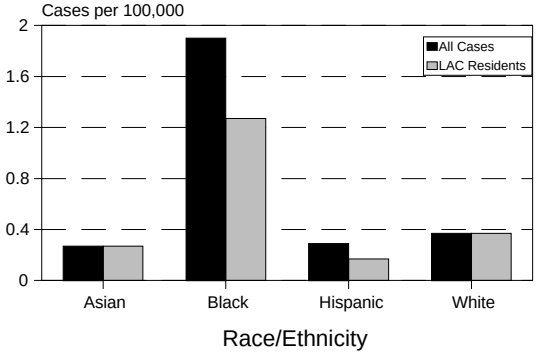
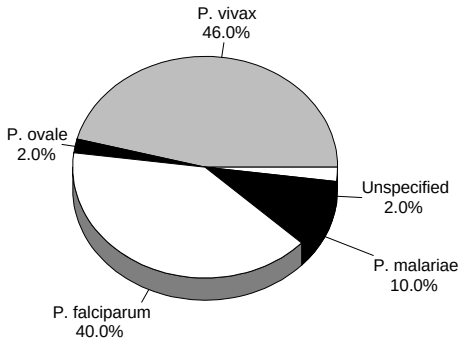


Figure 62

Malaria Cases by Species
Los Angeles County, 1998



Antimalarial prophylaxis history was available for 37 of the 38 US resident cases (Table 7). Only 9 individuals (24%) took any form of prophylaxis. Work-related cases were more likely than tourist cases to take prophylaxis (42% vs. 17%).

The infecting malaria species was identified for 49 cases (98%) (Figure 62). Most cases were infected with *P. vivax* (23, 46%) or *P. falciparum* (20, 40%); *P. malariae* accounted for 10% of cases, while there was only one case of *P. ovale*. All but one *P. falciparum* infections were acquired in Africa (Table 6).

Table 6. Malaria Cases by Species, Residency Status and Travel Exposure, Los Angeles County, 1998*

Foreign Travel by US Residents		Recent Immigration or Visit to US by Non-US Residents	
Region/Country	**Number of Cases (Species)****	**Country**	**Number of Cases (Species)****
Africa			
Angola	1 (1F)	Congo	1 (1F)
Equatorial Guinea	1 (1M)	Nigeria	4 (2V, 1F, 1L)
Ghana	2 (2F)	Senegal	1 (1F)
Ivory Coast	2 (2F)		
Kenya	1 (1F)		
Liberia	2 (2F)		
Nigeria	12 (4V, 6F, 1M, 1N)		
Tanzania	1 (1F)		
Western Africa, unsp.	1 (1F)		
Latin America			
Costa Rica	1 (1M)	El Salvador	2 (2V)
El Salvador	1 (1V)	Guatemala	1 (1V)
Guatemala	2 (2V)		
Mexico	3 (2V, 1M)		
Nicaragua	1 (1V)		
Asia/Oceania			
India	3 (3V)	India	2 (2V)
Indonesia	2 (1M, 1V)		
New Guinea	1 (1F)		
Unknown	1 (1V)		
Total	**38**		**11**

* N=49; one case with unknown residency status.
**F = *P. falciparum*, L = *P. ovale*, M = *P. malariae*, N = not determined, V = *P. vivax*, unsp. = country unspecified

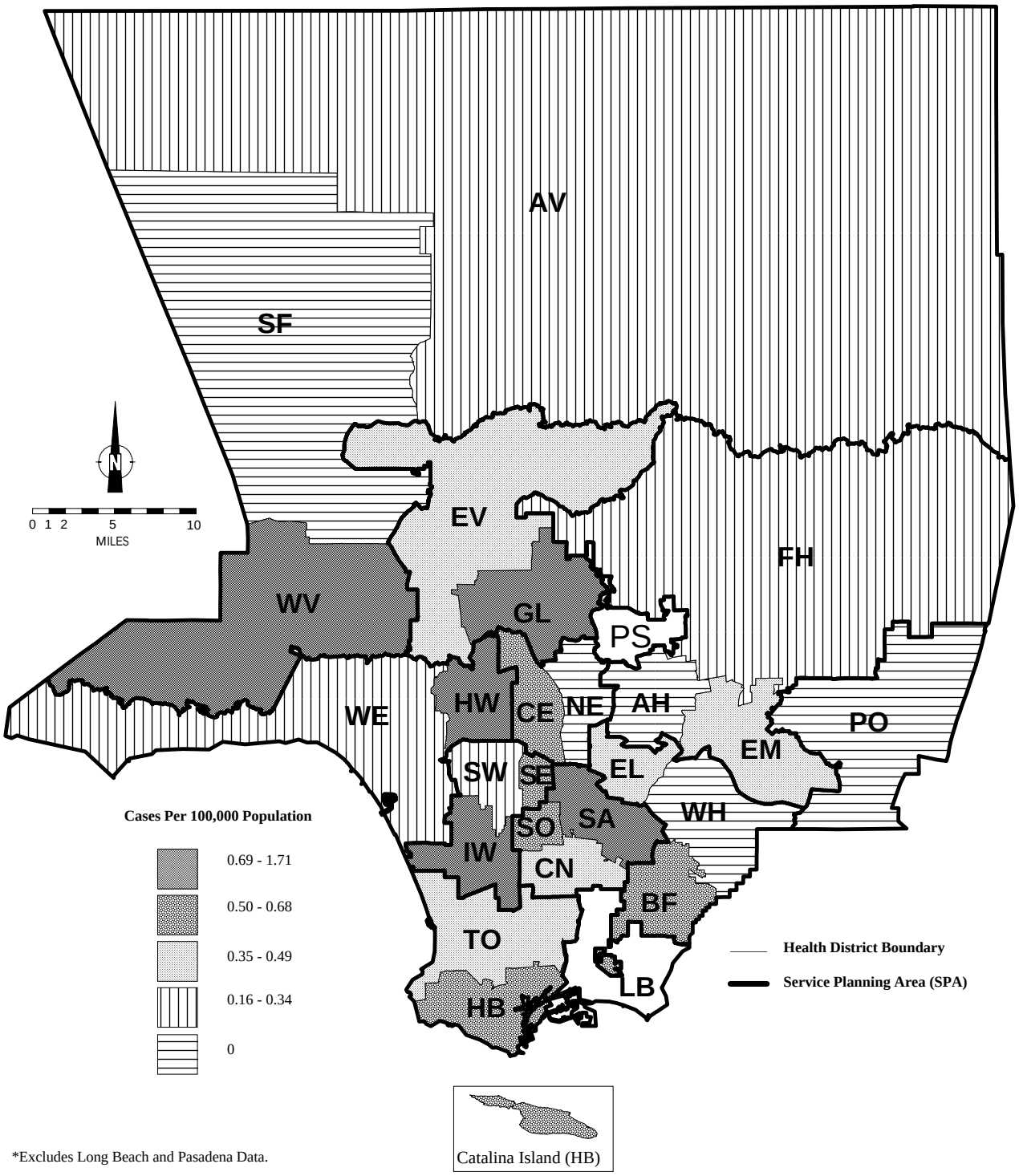
Table 7. Malaria Cases by Residency Status, Reason for Travel, Malaria Prophylaxis, and Previous Malaria History Los Angeles County, 1998

	US Residents			Non-US Residents
	Total US Residents	**Travel for Work**	**Travel for Pleasure**	**Recent Immigrant or Foreign Visitor to US**
Prophylaxis (%)	9/37 (24)	5/12 (42)	4/23 (17)	0*
Previous Malaria (%)	12/38 (32)	5/13 (38)	7/25 (28)	6/11 (55)

*Natives of malaria-endemic countries generally do not take pre-exposure prophylaxis.

MAP 7. Malaria

Rates by Health District, Los Angeles County, 1998*



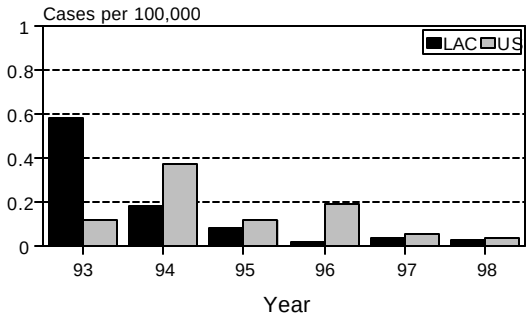
*Excludes Long Beach and Pasadena Data.

MEASLES

CRUDE DATA	
Number of Cases	3 (all imported)
Annual Incidence[a]	
LA County	0.03
California	0.02
United States	0.04
Age at Onset	
Mean	9 yrs
Median	6 yrs
Range	7 mos-19 yrs
Case Fatality	
LA County	0.0%
United States	N/A

Figure 63

Measles
Incidence Rates by Year
LAC and US, 1993-1998



[a]Cases per 100,000 population.

ETIOLOGY

Measles virus, a paramyxovirus, genus *Morbillivirus*.

DISEASE ABSTRACT

Imported measles cases continue to make up a significant proportion of the cases in LAC and the US. In 1998, all three measles cases were imported from abroad. Since the recent measles epidemic peak in 1990, when the incidence reached 50.5 cases per 100,000, measles incidence in LAC has been in rapid decline (Figure 63).

STRATIFIED DATA

In 1998, three cases of confirmed measles were reported (Table 8).

Table 8. Confirmed Measles Case Profiles, 1998

Case	Age	Race/Sex	Rash Onset	# of MMR Doses	IgM	Country of Importation	Hosp.	Birthplace
Case 1	19 yrs	Asian/M	06/98	unk	+	Japan	no	Japan
Case 2	6 yrs	Pac. Isl./F	08/98	unk	+	New Guinea	yes	New Guinea
Case 3	7 mos	Hisp./F	10/98	too young	+	Argentina	no	USA

Vaccination Status: Of the three confirmed cases, two had unknown vaccine history, and the third case was too young (7 months old) to have been vaccinated.

Importation Status: All three cases were imported from outside the United States. Two cases occurred in travelers visiting the USA. The third occurred in an infant who had traveled to Argentina, a country where increased measles activity was known to be occurring.

Hospitalization: One of the cases was hospitalized due to mouth lesions causing inability to eat.

Spread: No spread was known to have occurred from any of these cases.

COMMENTS

All reported suspected measles cases are investigated in LAC. The minimum clinical criteria for measles are: fever of at least 101°F (or "hot" to the touch), a generalized rash lasting three or more days, and one additional clinical feature (cough, coryza, or conjunctivitis). A case is confirmed by positive IgM serology or a four-fold increase in acute and convalescent IgG titers. Forty-four suspected cases were ruled out by negative serology or subsequent diagnosis as another condition such as scarlet fever, chickenpox, or antibiotic allergy.

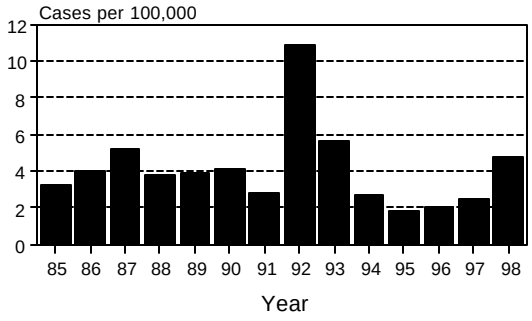
MENINGITIS, VIRAL

CRUDE DATA	
Number of Cases	438
Annual Incidence[a]	
LA County	4.8
United States	N/A
Age at Onset	
Mean	19
Median	14
Range	0-86 yrs
Case Fatality	
LA County	0.7%
United States	N/A

[a]Cases per 100,000 population.

Figure 64

Viral Meningitis
Incidence Rates by Year
Los Angeles County, 1985-1998



ETIOLOGY

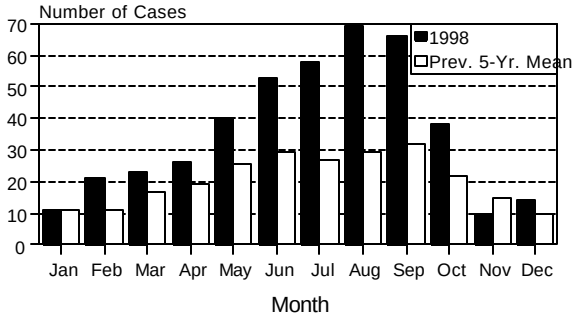
Viral (aseptic) meningitis is a clinical syndrome with multiple viral etiologies. A specific etiology is determined in a minority of cases. Of those with laboratory confirmation, enteroviruses are most often implicated.

DISEASE ABSTRACT

The incidence rate of viral meningitis in 1998 was nearly twice the rate observed the previous year (Figure 64); the increase was greatest among children five to fourteen years of age (Figure 66).

Figure 65

Viral Meningitis
Cases by Month of Onset
Los Angeles County, 1998



STRATIFIED DATA

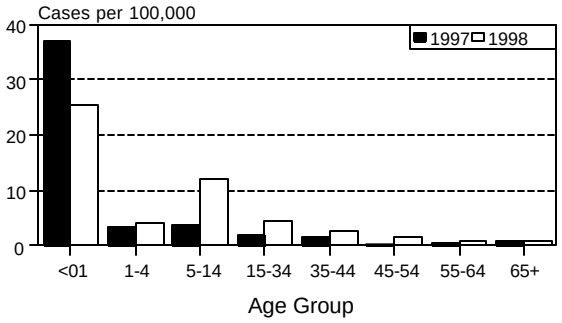
Trends: Since 1989, incidence rates of viral meningitis have ranged between 10.9 cases per 100,000 (a record high) to 1.8 per 100,000 in 1995. The incidence rate in 1998 (4.8 cases per 100,000) increased 92% over that observed in 1997 (2.5 cases per 100,000) (Figure 64).

Seasonality: Cases were distributed throughout the year, with the characteristic summer seasonality more apparent in 1998, compared with the previous five-year monthly averages (Figure 65).

Age: The highest age-specific incidence rate occurred in infants less than one year of age (25.3 cases per 100,000). A decrease in incidence in the 1- to 4-year-old age group was offset by an increase among 5- to 14-year-olds in 1998 (Figure 66).

Figure 66

Viral Meningitis
Incidence Rates by Age Group
Los Angeles County, 1997 and 1998



Sex: The male-to-female rate ratio was 1.1:1.

Race/Ethnicity: The age-adjusted incidence rate was highest among Whites and Hispanics (4.7 cases per 100,000 population), followed by Blacks (4.4 per 100,000), and Asians (2.1 per 100,000) (data not shown).

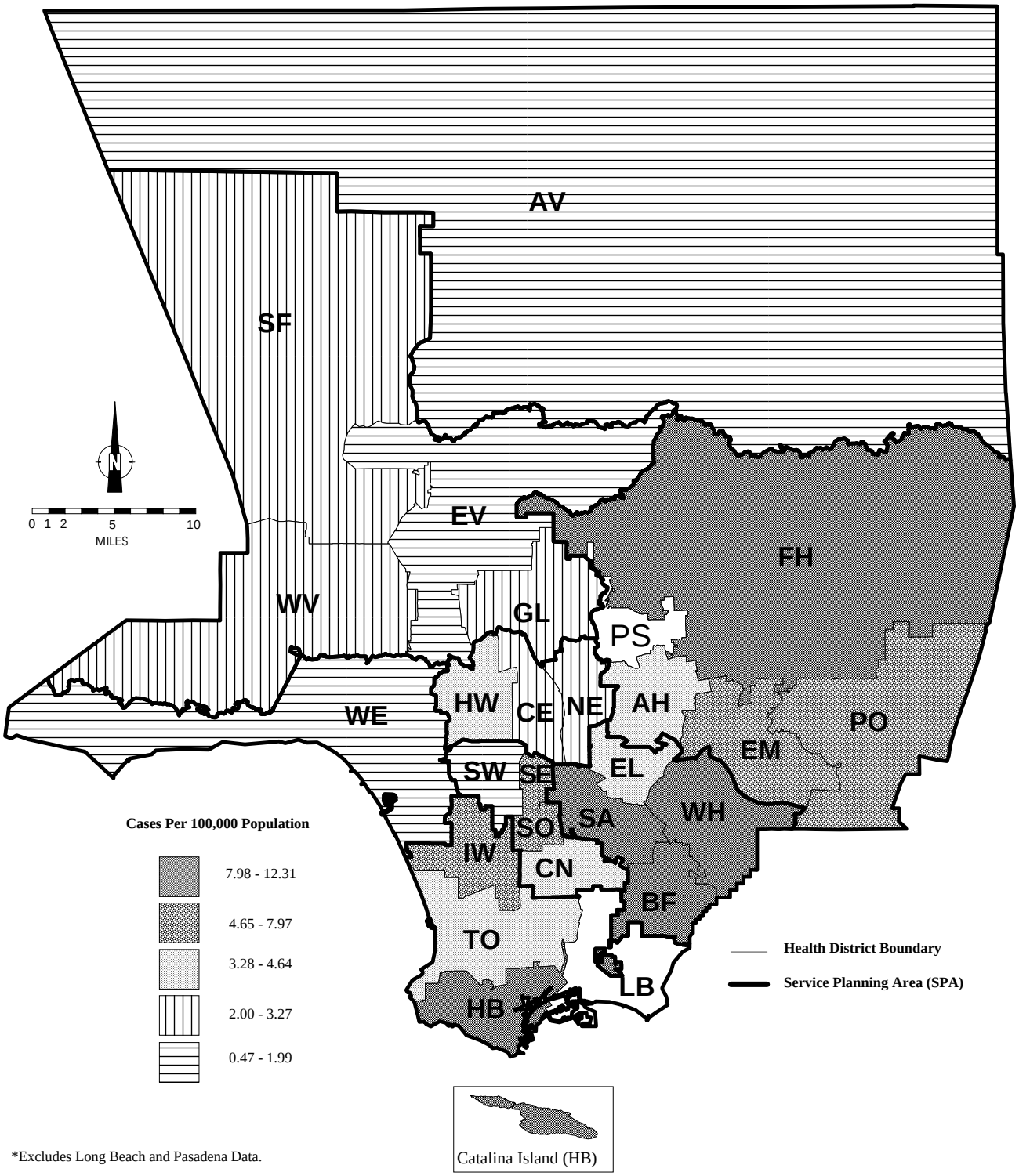
Location: Six health districts experienced rates higher than the overall LAC rate of 4.8 cases per 100,000 population. The highest rates of viral meningitis in 1998 were in Whittier (12.3 per 100,000) and San Antonio (9.0 per 100,000) Health Districts.

COMMENTS

The majority of cases reported as viral meningitis are not laboratory confirmed. The diagnosis is typically one of exclusion, based on a clinical description consisting of acute onset of meningeal symptoms, fever, white blood cells in the cerebrospinal fluid, with bacteriologically sterile cultures. Viral cultures are usually not performed due to cost, requirement for a laboratory with virologic capability, extended time needed for viral growth and identification, and lack of specific therapy.

Preventive measures depend on the specific etiologic agent. Vaccination provides primary prevention against meningitis due to those viral diseases for which a vaccine is available, such as measles, mumps, and rubella. Although the etiologic agent for over 90% of cases is unidentified, epidemiologic evidence suggests that most cases of viral meningitis are enteroviral in origin. The seasonal increase in incidence in LAC during the warmer summer months coincides with observed increases in enterovirus activity. Since enteroviral transmission is primarily through the fecal-oral route, prevention is directed at proper personal hygiene with emphasis on good handwashing. Explanations for the disproportionately high rates found consistently among infants may include lack of acquired immunity and the ease of fecal-oral transmission of enteroviruses in this age group. There were no outbreaks of viral meningitis reported in 1998. The increase in rates among 5- to 14-year-olds in 1998 was unexplained.

MAP 8. Viral Meningitis
Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

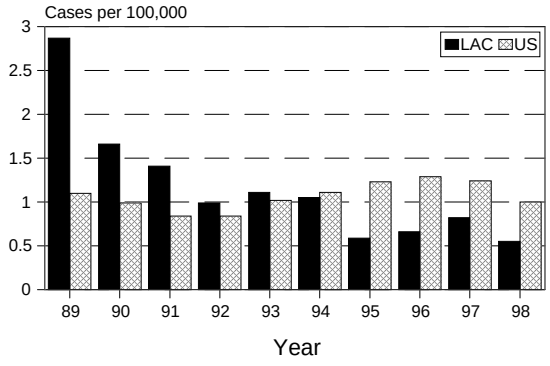
MENINGOCOCCAL DISEASE

CRUDE DATA	
Number of Cases	50
Annual Incidence[a]	
LA County	0.55
California	0.98
United States	1.0
Age at Onset	
Mean	27
Median	14
Range	2 mos - 92 yrs
Case Fatality	
LA County	10%
United States	N/A

[a]Cases per 100,000 population.

Figure 67

Meningococcal Disease
Incidence Rates by Year of Onset
LAC and US, 1989-1998



ETIOLOGY

Neisseria meningitidis, a gram-negative diplococcus.

DISEASE ABSTRACT

The incidence of meningococcal disease reached a ten-year low in 1998. Cases, including one in a prenatal patient, were sporadic and unrelated.

STRATIFIED DATA

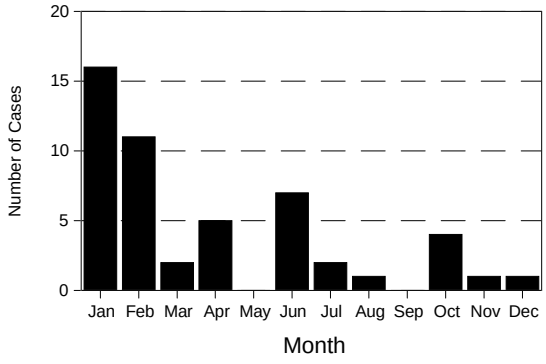
Trends: The number of cases decreased in 1998, reversing the slight upward trend over the previous two years (Figure 67). Fatalities were confined to adults.

Seasonality: Seasonal occurrence was highest during the winter with the majority of cases (n=27) occurring in January and February (Figure 68).

Age: In 1998, disease rates continued highest among infants less-than-one-year of age (7.53

Figure 68

Meningococcal Disease
Cases by Month of Onset
Los Angeles County, 1998



per 100,000) but decreased from the previous year. There were no fatalities among infants or children. Although the next highest rates occurred among those aged 65 and over (1.41 per 100,000), rates in this and all other age groups were significantly lower than in infants (Figure 69). All fatalities in 1998 (n=5) occurred among adults; three were over age 65.

Sex: The male-to-female rate ratio was 1:1.2.

Race/Ethnicity: For the first time since 1994, age-adjusted meningococcal disease rates in Latinos (0.65 per 100,000) and Whites (0.57 per 100,000) exceeded the rate in Blacks (0.13 per 100,000). Rates continued to be lowest among Asians (0.10 per 100,000) (Figure 70).

Location: The highest rates of meningococcal disease occurred in the Central (1.3 per 100,000), San Antonio (0.9 per 100,000), and Torrance (0.9 per 100,000) Health Districts (Map 9).

COMMENTS

In 1998, *N. meningitidis* was isolated from 46 (92%) of the cases reported, 19 (38%) from blood, 24 (48%) from cerebrospinal fluid, 2 (4%) from both, and 1 (2%) from conjunctiva (Figure 71). Serogroup identification was made in 78% of the cases. Serogroup Y (44%) continued to predominate, followed closely by serogroup B (41%). Serogroup C (15%) continued to decline and remained relatively low (Figure 72).

Figure 69

Meningococcal Disease
Incidence Rates by Age Group
Los Angeles County, 1997-1998

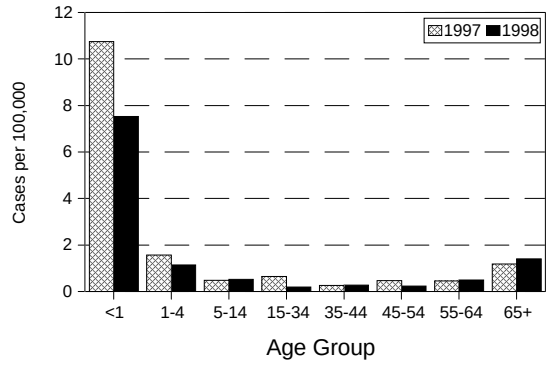
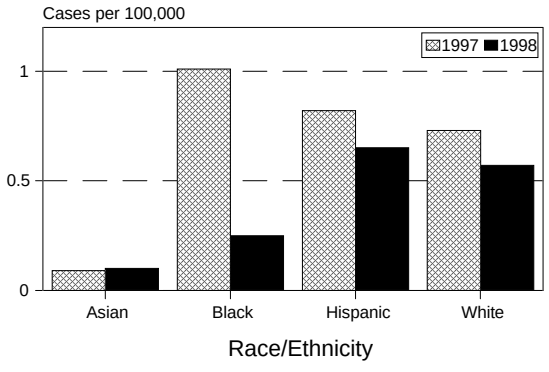


Figure 70

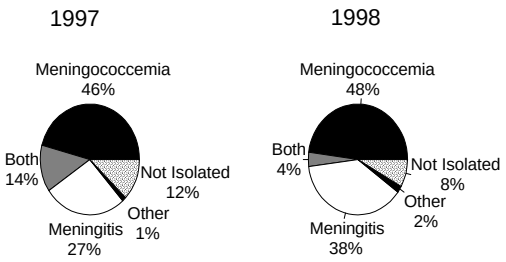
Meningococcal Disease
Age-adjusted Rates by Race/Ethnicity
Los Angeles County, 1997-1998



There were five deaths from meningococcal disease in 1998. All were adults (range 27 to 92 years). In an unusual case, overwhelming sepsis in a 44-year-old multipara at 34 weeks' gestation resulted in the spontaneous delivery of a stillborn fetus and the mother's death within 15 hours of onset.

Figure 71

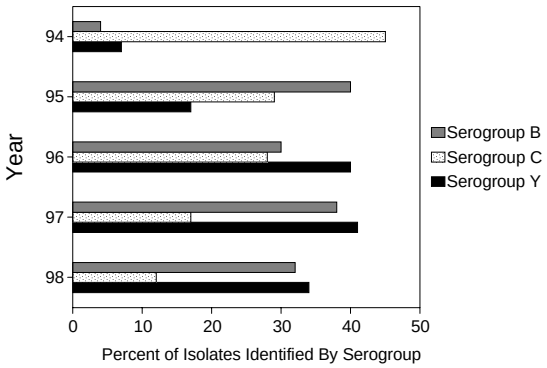
Meningococcal Disease
Clinical Manifestations
Los Angeles County, 1997-1998



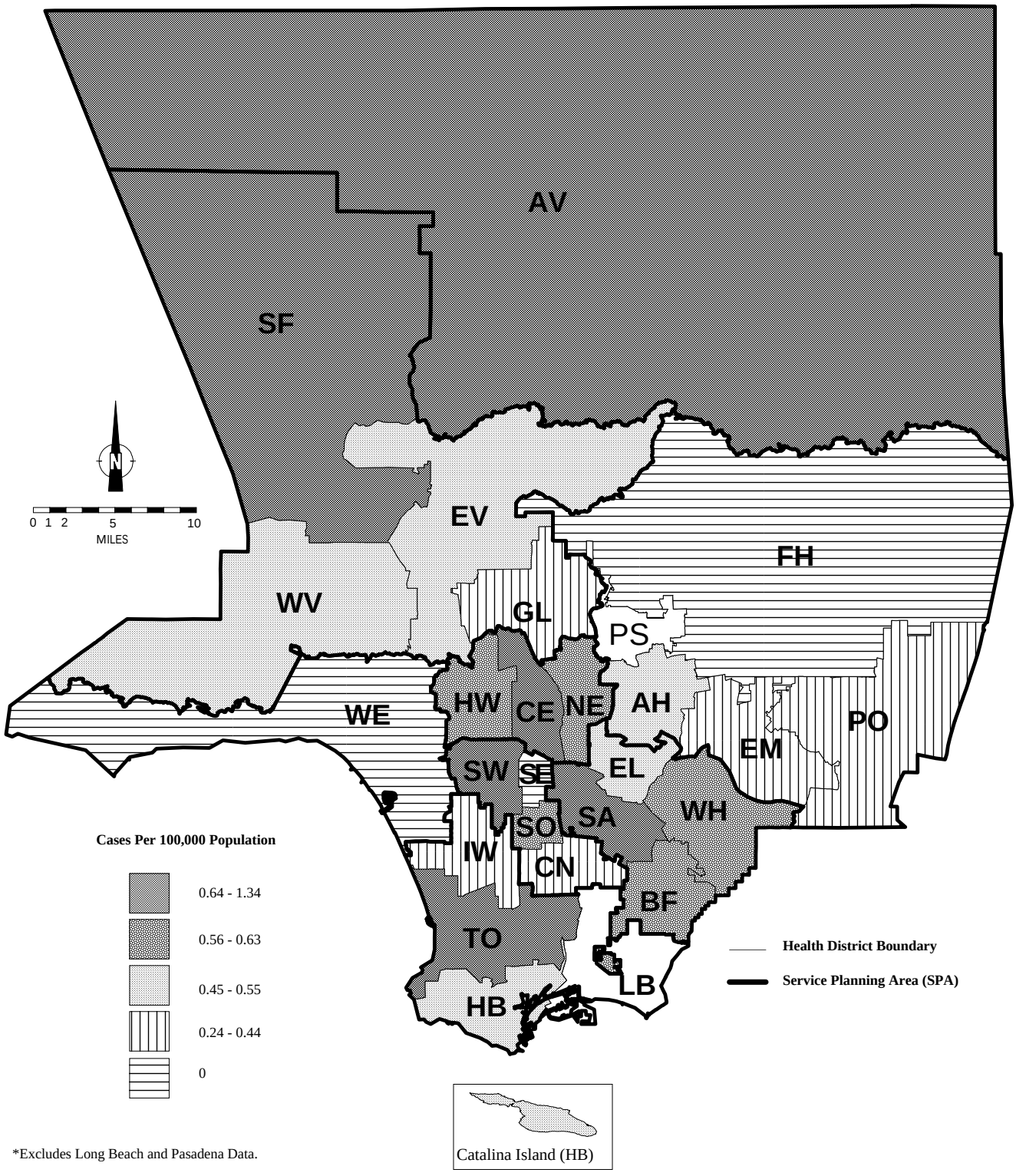
N=74 N=50

Figure 72

Neisseria Meningitidis
Serogroups B, C, and Y
Los Angeles County, 1994-1998



MAP 9. Meningococcal Disease
Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

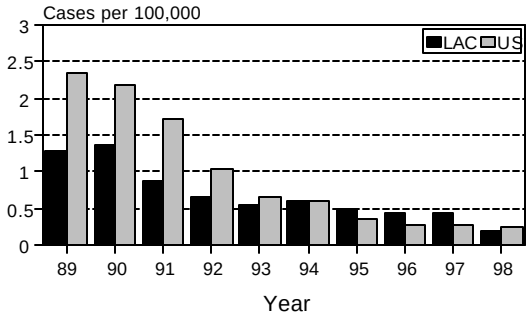
MUMPS

CRUDE DATA	
Number of Cases	21
Annual Incidence[a]	
LA County	0.2
California	0.3
United States	0.3
Age at Onset	
Mean	17 yrs
Median	12 yrs
Range	2-48 yrs
Case Fatality	
LA County	N/A
United States	N/A

[a]Cases per 100,000 population.

Figure 73

Mumps
Incidence Rates by Year
LAC and US, 1989-1998



ETIOLOGY

Mumps virus, an RNA paramyxovirus.

DISEASE ABSTRACT

The incidence of reported clinical mumps reached an all time low in 1998 (Figure 73). Mumps case data are obtained from CMRs reported by physicians. Individual mumps cases are not investigated by the health department.

COMMENTS

The majority of mumps cases are diagnosed clinically without confirmatory laboratory testing. It is not known how many cases are laboratory confirmed.

In 1998, twice as many mumps cases were reported in males than in females (14:7). No distinct seasonal pattern was seen. The highest race-specific incidence was among Hispanics (0.2 per 100,000). The highest number of cases (n=8) was seen among 5- to14-year-olds, but the highest incidence was among 1- to 4-year-olds (0.7 per 100,000). The Harbor Health District had the highest incidence in LAC (1.0 per 100,000).

The current vaccine elicits antibody response in over 95% of recipients and confers durable, presumably lifelong immunity.

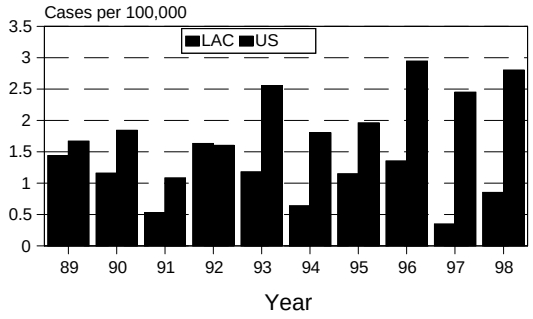
PERTUSSIS (WHOOPING COUGH)

CRUDE DATA	
Number of Cases	77
Annual Incidence[a]	
LA County	0.9
California	3.0
United States	2.8
Age at Onset	
Mean	5 yrs
Median	3 mos
Range	<1 mo-57 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 74

Pertussis
Incidence Rates by Year
LAC and US, 1989-1998



ETIOLOGY

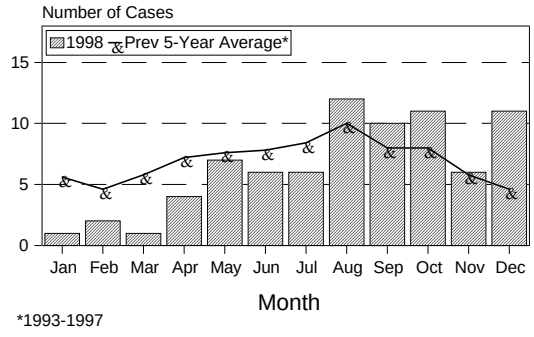
Bordetella pertussis, a fastidious, gram-negative, pleomorphic bacilli.

DISEASE ABSTRACT

The 1998 incidence rate of pertussis in LAC increased from a record low rate the previous year. The pertussis rate was highest among infants. Age-adjusted rates were highest among Blacks. The complication of pneumonia was reported this year; there were no deaths. Forty-seven percent (n=36) of the cases were confirmed with a nasopharyngeal swab culture positive for *Bordetella pertussis.* The other 53% (n=41) met the clinical criteria for pertussis: a cough lasting at least two weeks with either paroxysms of coughing or inspiratory "whoop," or post-tussive vomiting, without other apparent causes.

Figure 75

Pertussis
Cases by Month of Onset
Los Angeles County, 1998



STRATIFIED DATA

Trends: The incidence of pertussis in 1998 was 0.9 cases per 100,000 population (Figure 74). This is an increase from the previous year's all-time low rate of 0.4 cases per 100,000 population. An increase in the rate was expected as pertussis incidence runs in 3- to 4- year cycles.

Seasonality: Cases were spread throughout the year with increased activity in August through the fall. The mean five-year trend (1993-1997) also shows a high in August (Figure 75).

Age: The age-specific incidence rate among children less than one year of age was 37.6 cases per 100,000 population compared to 1.0 case per 100,000 population among children aged 1-4 years old (Figure 76). The lowest incidence was in the 15-34 years and 35+ years age groups (both 0.1 cases per 100,000 population). Sixty-eight percent of the cases occurred in infants less than 6 months old. The incidence for infants under one year of age followed the traditional pattern of the highest incidence exhibited in infants less than one month of age with a steady decrease in incidence until six months of age (Figure 77).

Sex: The male-to-female rate ratio was 1:1.3. Morbidity for this disease is usually slightly higher in females than males.

Race/Ethnicity: The age-adjusted incidence rate for pertussis was highest for Blacks (0.9 per 100,000 population) followed by Hispanics (0.8 per 100,000) (Figure 78). The greatest number of cases was reported among Hispanics (n=45), followed by Whites (n=17), Blacks (n=11) and Asians (n=4).

Location: The highest rates were in the San Fernando and Harbor Health Districts (both 2.0 cases per 100,000 population). The lowest rate was in the Pomona Health District (0.4 cases per 100,000 population).

COMMENTS

Complications/Hospitalization: Infants are at the highest risk for complications from pertussis. Pneumonia developed in two cases (3%) in 1998; both cases were less than six months old. Of the 51 hospitalized cases, 88% (n=45) were less than one year old. The average hospital stay was 8 days (range 1-30 days). There were no deaths reported.

Figure 76

Pertussis
Incidence Rates by Age Group
Los Angeles County, 1997-1998

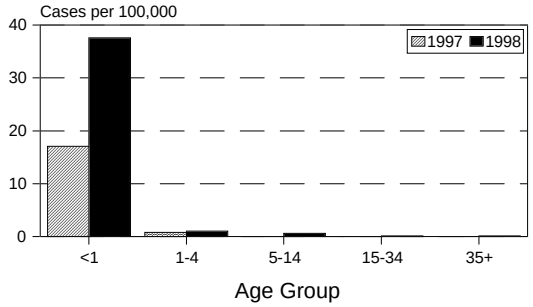
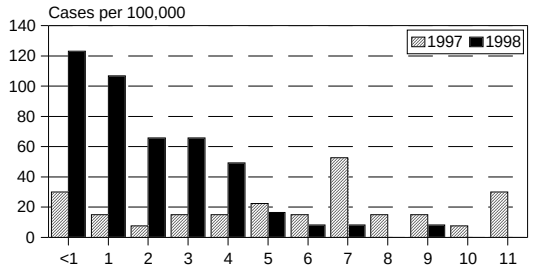


Figure 77

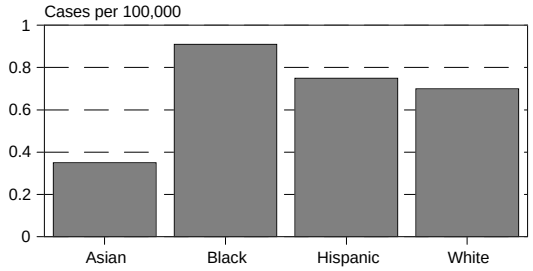
Pertussis
Incidence Rates by Age*
Los Angeles County, 1997-1998



*Includes only cases less than one year of age.

Figure 78

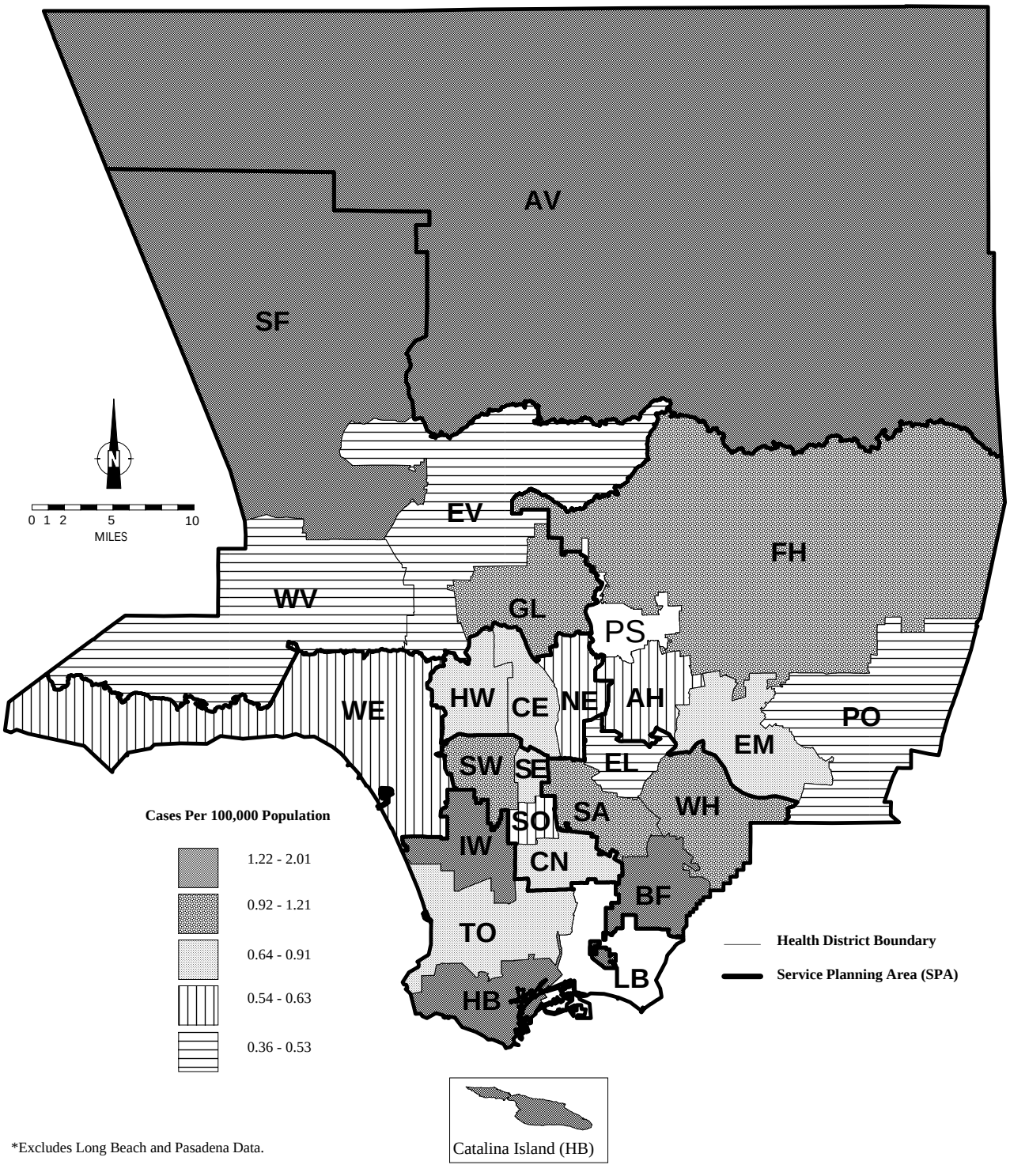
Pertussis
Age-adjusted Rates by Race/Ethnicity
Los Angeles County, 1998



Vaccination Status: Pertussis-containing vaccine should be given at 2 months, 4 months, 6 months, 15-18 months, and 4-6 years of age. Immunity conferred by the pertussis component of the DTP/DTaP vaccine decreases over time with little or no protection 5 to 10 years following the last dose. Twenty-eight of the cases (36%) were less than two months of age and too young for the first vaccine dose. An additional 8 cases (10%) were 15 years old or older; their immunity would have waned even if they had been immunized. Thus, 46% of the cases could not have been prevented by the vaccine. Twenty-five cases were in the 2-month to 6-month age group; of these, 80% were up to date for their age but would have had incomplete immunity. Of the children who could have had full immunity conferred by the vaccine (7 months to 15 years old), eight (50%) were fully up to date, four (25%) were underimmunized, and 4 (25%) were unimmunized. One child in this category had unknown immunization status.

Adolescent/Adult Cases: Because immunity conferred by the vaccine wanes, adolescents and adults can serve as a reservoir for the disease. Adults and adolescents with pertussis often go undiagnosed because they are more likely to have mild or atypical disease and physicians may not consider the diagnosis in non-pediatric patients. Unimmunized and underimmunized infants are often infected by undiagnosed adult cases.

MAP 10. Pertussis
Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

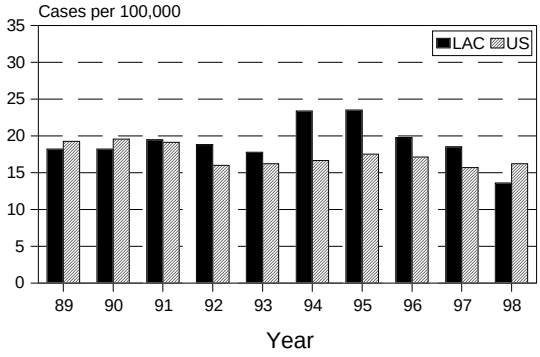
SALMONELLOSIS

CRUDE DATA	
Number of Cases	1,236
Annual Incidence[a]	
LA County	13.6
California	14.5
United States	16.2
Age at Onset	
Mean	24
Median	24
Range	<1-99 yrs
Case Fatality	
LA County	0.4%
United States	N/A

[a]Cases per 100,000 population.

Figure 79

Salmonellosis
Incidence Rates by Year
LAC and US, 1989-1998



ETIOLOGY

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

DISEASE ABSTRACT

The 1998 salmonellosis crude rate dropped 26% compared to 1997. Although *S. enteritidis* serotype (SE) has remained the most common since *S. typhimurium* in 1994 (accounting for 32% of all reported 1998 *Salmonella* infections), it decreased 18% in 1998. Table 9 shows the 10 most frequently isolated *Salmonella* serotypes (excluding *S. typhi*) submitted to Los Angeles County (LAC) Department of Health Services' Bacteriology Laboratory in 1998. SE was the etiologic agent identified in 15 of 22 *Salmonella* outbreaks in 1998.

STRATIFIED DATA

Trends: The incidence of reported salmonellosis cases in 1998 dropped to 13.6 cases per 100,000 population, a decrease of 26%. This represents the lowest rate in LAC in the past 10 years (Figure 79). Despite a 18% decrease in SE cases in 1998, SE still makes up 32% of all *Salmonella* isolates.

Seasonality: In 1998, a peak was seen during late summer/early fall, consistent with the usual seasonal increase in reported cases (Figure 80).

Age: As in past years, the highest age-specific rates of infection occurred among infants (75 per 100,000 population) followed by 1- to 4-year-olds (33 per 100,000) (Figure 81).

Sex: The male-to-female rate ratio was 1.1:1.

Figure 80

Salmonellosis
Cases by Month of Onset
Los Angeles County, 1998

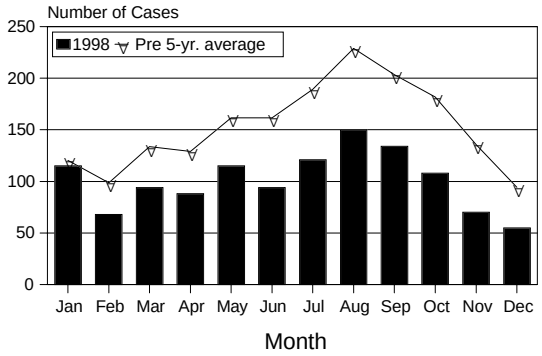
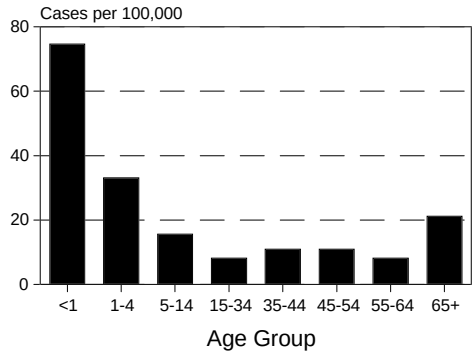


Figure 81

Salmonellosis
Incidence Rates by Age Group
Los Angeles County, 1998



Race/Ethnicity: The highest age-adjusted rate was in Whites (16.4 cases per 100,000 population), followed by Hispanics (13.8), Blacks (12.9) and Asians (8.8) (Figure 82). Many of the outbreaks occurring in 1998 involved Whites and Hispanics.

Location: East Los Angeles Health District had the highest incidence rate per 100,000 population (17.7). Harbor had the second highest rate (16.5), followed by Antelope Valley (16.0). In 1998, five outbreaks each occurred in the jurisdictions covered by Whittier Health Center and Pacoima Health Center.

Table 9. Top 10 *Salmonella* Serotypes
Los Angeles County, 1997-1998

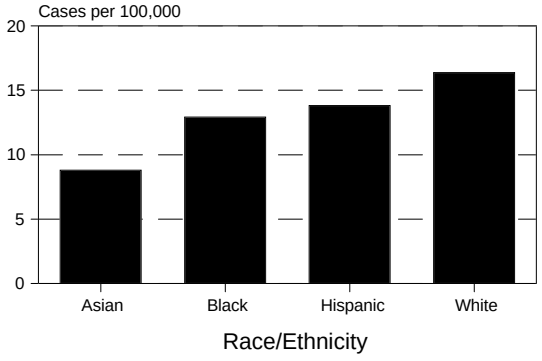
	1997 N[a]=1949		1998 N[a]=1377		Percent
Serotype	**No.**	**Percent**	**No.**	**Percent**	**Change**
S. enteritidis	763	39.0	439	31.9	-18
S. typhimurium[b]	293	15.0	247	17.9	+19
S. heidelberg	124	6.4	98	7.1	+11
S. agona	26	1.3	64	4.7	+262
S. newport	37	1.9	52	3.8	+100
S. montevideo	73	3.8	45	3.3	-13
S. infantis	57	2.9	28	2.0	-31
S. oranienberg	44	2.3	27	2.0	-13
S. thompson	31	1.6	26	1.9	+19
S. hadar	43	2.2	23	1.7	-23

[a]Denominator (N)=total isolates serotyped.
[b]Includes var. *copenhagen* and degraded form.

REVENTION

Figure 82

Salmonellosis
Age-adjusted Rates by Race/Ethnicity
Los Angeles County, 1998



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 consumption of raw or undercooked eggs and meats, not washing hands and/or cutting boards after handling raw poultry or meat, and not maintaining food at proper temperature to prevent bacterial growth. 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. In addition, because fresh produce has been recognized as a source of salmonellosis, washing of fresh fruits and vegetables prior to consumption is advised. The 11 commercial food establishment and two health facility-associated salmonellosis outbreaks reported in 1998 show that health education efforts for foodhandlers need to be intensified in the commercial food industry and in long-term care institutions.

COMMENTS

The reason for the declining rate of salmonellosis is unknown; rates for other enteric diseases have dropped as well. During 1998 there were 22 reported outbreaks of salmonellosis in LAC, the largest number of outbreaks in 15 years (Table 10). Outbreak-related cases accounted for 10% of all culture-confirmed salmonellosis cases in 1998. One outbreak was caused by three seroptypes, *heidelberg, infantis,* and *adelaide* with some persons being infected with two serotypes. Two other outbreaks were caused by *S*. *heidelberg.* One outbreak each was caused by *newport*, *thompson*, *cubana*, and *havana*. The *cubana* and *havana* outbreaks were part of larger statewide outbreaks caused by alfalfa sprouts. A nation-wide outbreak of *S. agona* associated with toasted oats cereal occurred in 1998; LAC noted an increase in *S*. *agona* at the same time as the outbreak, but was unable to document an association with the multi-state outbreak. SE was the etiologic agent identified in 15 of the 22 outbreaks, similar to the trend since 1994 in which SE has been the agent in the majority of outbreaks. In 10 of the 15 SE outbreaks, eggs or poultry were the suspected source. Phage type 6a was identified in one SE outbreak; phage type 4 was identified in the other 14 SE outbreaks. Decreases in sporadic cases of SE infections parallel an overall decrease in SE incidence in Southern California. Since 1995, fresh produce, most notably alfalfa sprouts, has increasingly been recognized in the US as a source of salmonellosis.

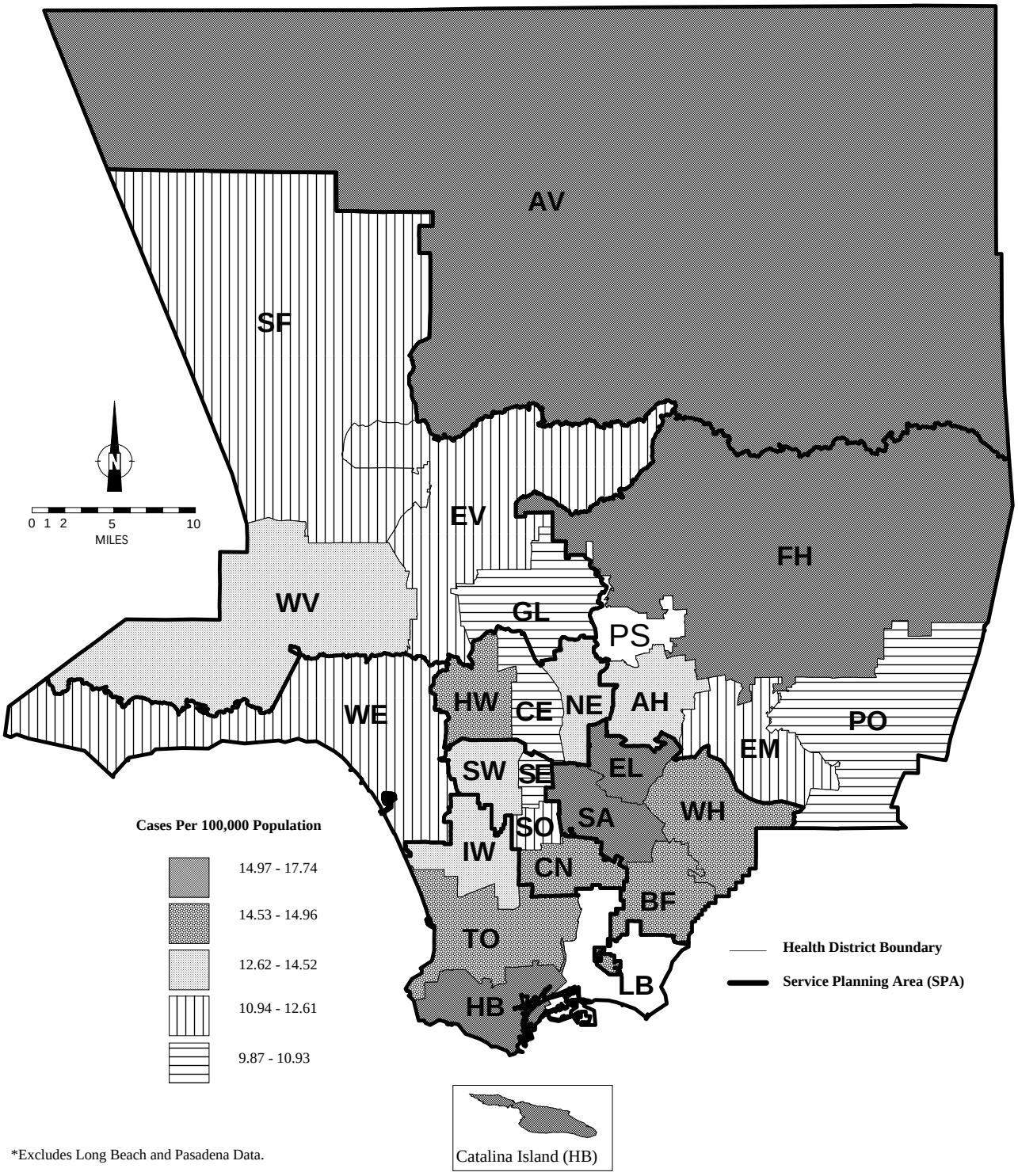
Salmonellosis diagnosed just prior to death was a contributing cause of death for five persons who expired. All five had underlying health problems. Four of the five were hospitalized with symptoms which probably were caused by salmonellosis; two had sepsis. Three of the five had acute diarrhea.

Table 10. Salmonellosis Outbreaks in Los Angeles County, 1998

Onset Month	Outbreak Setting	Total #Ill	Culture Positive	Serotype	Suspect Vehicle	Suspect Source
January	Private home	7	3	SE	Macaroni & Cheese, Roast turkey	Eggs, turkey
January	Restaurant	4	3	SE	Stuffing	Eggs
January	Private home	26	9	SE	Lasagna	Eggs
February	Restaurant	14	7	SE	Chicken Enchiladas	Chicken
March	Restaurant	8	6	SE	Various	Foodhandler
March	Private home	6	2	SE	Ice Cream	Eggs
May	None	8	8	SC	Various	Alfalfa sprouts
May	None	5	5	SHa	Various	Alfalfa sprouts
July	Restaurant	6	5	SE	Hamburgers	Unknown
July	Restaurant	16	10	SN	Various	Unknown
July	Private home	4	2	SE	Boiled Chicken	Chicken
August	Bakery	114	17	SH	Cake	Eggs
August	Restaurant	4	1	SE	Chicken Salad	Chicken
August	Restaurant	4	2	SE	Unknown	Unknown
September	Restaurant	6	5	SE	Unknown	Unknown
October	Day Care	3	3	SH	Unknown	Unknown
October	Restaurant	15	3	SE	Turkey Salad	Unknown
October	SNF	17	8	SE	Scrambled Eggs	Eggs
October	SNF	4	4	SE	Undercooked Eggs	Eggs
November	Church	19	3	SE	Chile Rellenos	Eggs
November	Restaurant	17	6	ST	Potato Salad	Chicken
November	Private home	16	10	SA, SI, SH	Various	Turkey
		323	122			

SA = *Salmonella adelaide*
SC = *Salmonella cubana*
SE =*Salmonella enteritidis*
SHa = *Salmonella havana*
SH = *Salmonella heidelberg*
SI = *Salmonella infantis*
SN = *Salmonella newport*
ST = *Salmonella thompson*

MAP 11. Salmonellosis
Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

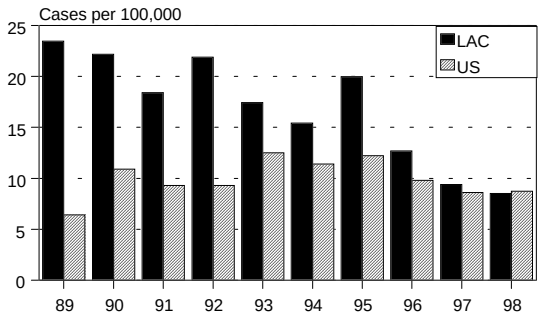
SHIGELLOSIS

CRUDE DATA	
Number of Cases	773
Annual Incidence[a]	
LA County	8.5
California	9.28
United States	8.74
Age at Onset	
Mean	19
Median	9
Range	<1-93 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 83

Shigellosis
Incidence Rates by Year
LAC and US, 1989-1998



ETIOLOGY

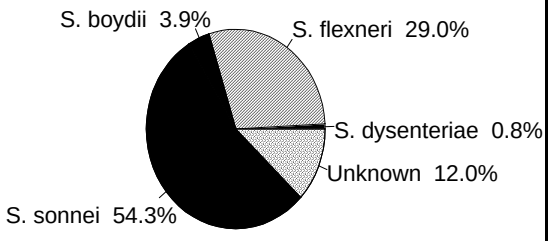
Shigella is a gram-negative bacillus with four serogroups: *S. dysenteriae* (group A)*, S. flexneri* (group B)*, S. boydii* (group C)*, and S. sonnei* (group D)*.*

DISEASE ABSTRACT

There has been a steadily decreasing incidence of shigellosis since 1989 (Figure 83). *Shigella flexneri* and *S. sonnei* were the most common (Figure 84). There were three shigellosis outbreaks reported in 1998; all were *S. sonnei.* One was a daycare center outbreak and the other two were associated with a multistate outbreak that implicated fresh parsley imported from a farm in Mexico.

Figure 84

Shigellosis
by Serogroup, LA County, 1998



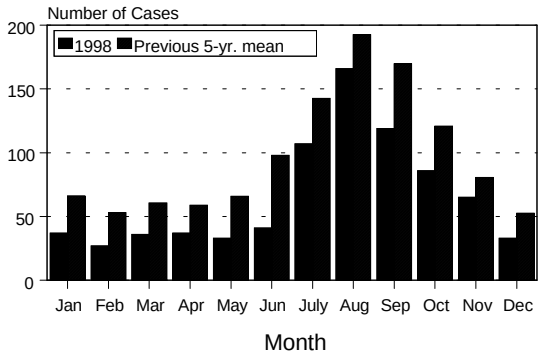
STRATIFIED DATA

Trends: Compared to the previous year, the rate decreased by 10%. Reasons for the decline in reported incidence are unknown. Shigellosis incidence rates continue to be highest among the younger age groups, with more than one-half of all cases occurring in those under 15 and approximately one-third under the age of five.

Seasonality: The typical seasonal increase in shigellosis occurs during the summer and early fall, with peak incidence in August, this pattern continued in 1998 (Figure 85).

Figure 85

Shigellosis
Cases by Month of Onset
Los Angeles County, 1998



Age: Seventy-eight percent (605) of cases occurred among persons under 35, and 71% (430) of cases under 35 were in children under 15. The highest rate, 33.9 per 100,000 population, was seen among 1- to 4-year-olds (Figure 86).

Sex: The male-to-female ratio was 1:1.1.

Race/Ethnicity: In 1998, the incidence of shigellosis continued to be highest among Hispanics (12.42 cases per 100,000 population). The rates increased 16% in Blacks, and decreased 43% in Asians and 13% in Whites. The rates among Hispanics remained relatively stable (Figure 87).

Location: The highest rates of shigellosis in 1998 were in the Hollywood-Wilshire (16.60 per 100,000), Northeast (15.40 per 100,000), and Southeast (14.61 per 100,000) Health Districts (Map 12).

COMMENTS

Potential Sources: Among cases, exposure during international travel and exposure to an ill individual in the household were the most commonly reported potential sources. Other reported exposures included participation in an outdoor activity (e.g., hiking, camping, swimming), contact with an ill individual outside the household, travel within the United States, contact with a daycare center, and drinking untreated water.

Figure 87

Shigellosis
Incidence Rates by Age Group
Los Angeles County, 1997-1998

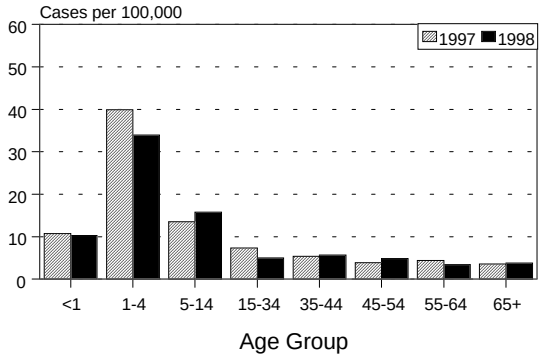
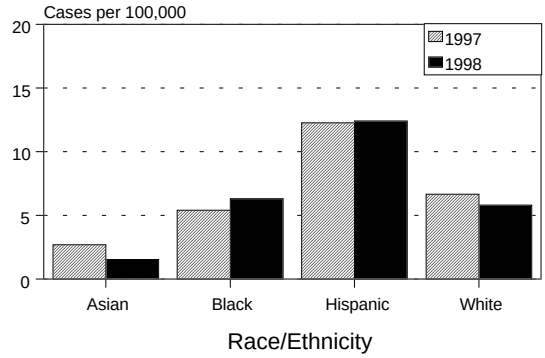


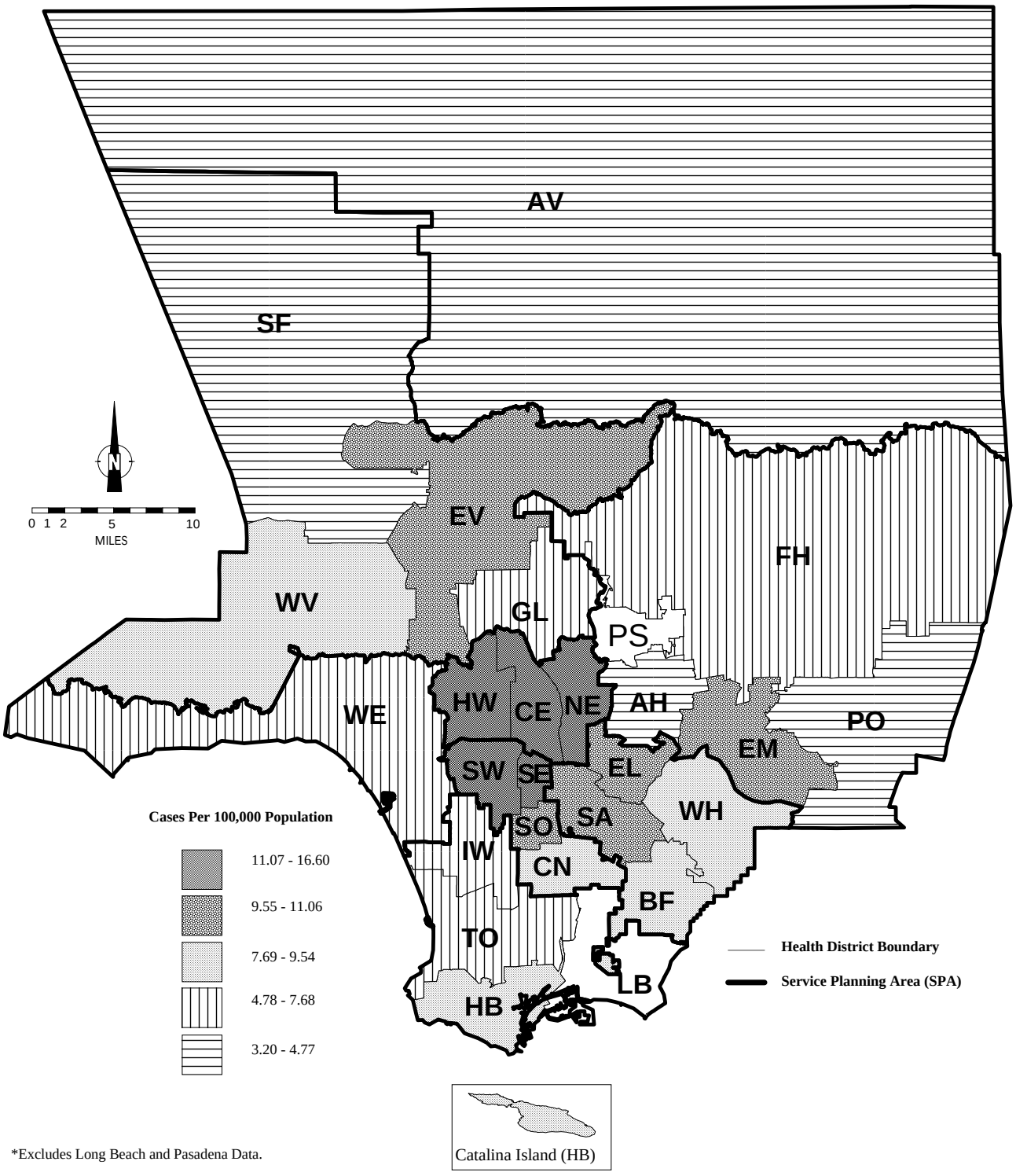
Figure 86

Shigellosis
Age-adjusted Rates by Race/Ethnicity
Los Angeles County, 1997-1998



Transmission Risks: Individuals in sensitive occupations (e.g., foodhandling, healthcare workers) or sensitive situations (e.g., daycare) may pose a transmission risk to the community. Cases and symptomatic contacts in sensitive occupations or situations are routinely removed from work or the situation until they are negative on stool specimens tested in the Public Health Laboratory.

MAP 12. Shigellosis
Rates by Health District, Los Angeles County, 1998*



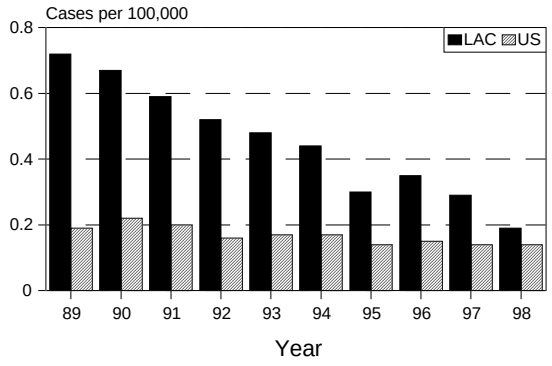
*Excludes Long Beach and Pasadena Data.

TYPHOID FEVER, ACUTE

CRUDE DATA	
Number of Cases	17
Annual Incidence[a]	
LA County	0.19
California	0.00
United States	0.00
Age at Onset	
Mean	21
Median	20
Range	1-74 yrs
Case Fatality	
LA County	0
United States	N/A

[a]Cases per 100,000 population.

Figure 88
Acute Typhoid Fever
Incidence Rates by Year of Onset
LAC and US, 1989-1998



ETIOLOGY

Salmonella typhi, a gram-negative bacillus.

DISEASE ABSTRACT

Acute typhoid fever is primarily a disease associated with recent immigration, travel, or contact with a previously unknown carrier.

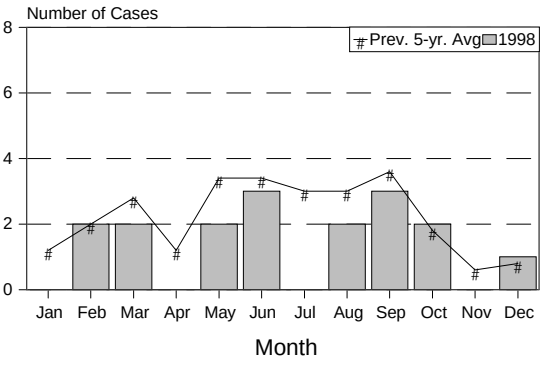
STRATIFIED DATA

Trends: The rate of reported typhoid fever cases has been steadily decreasing in the last ten years. Annual incidence declined from 0.72 per 100,000 population in 1989 to 0.19 in 1998 (Figure 88).

Seasonality: Late spring and summer months have the most cases, coinciding with holidays and school vacation (Figure 89).

Age: The 1- to 4-year-old and the 5- to 14-year-old age groups had the highest incidence rates, 0.66 and 0.30 per 100,000 population, respectively (Figure 90).

Figure 89
Acute Typhoid Fever
Cases by Month of Onset
Los Angeles County,1998



Sex: The male-to-female rate ratio was 1:1.1. Typically, a slight tendency for more frequent acute disease exists in males; however, this year the ratio is about equal.

Race/Ethnicity: As in past years, acute typhoid fever continues to be seen primarily in Asians and Hispanics (Figure 91).

Location: Case location in LAC at the time of illness was not related to disease acquisition; twelve (71%) cases acquired disease outside the US.

PREVENTION: Handwashing after using the toilet, before preparing or serving food, and before and after caring for others is important in preventing the spread of typhoid. When traveling where sanitary practices are uncertain, foods should be thoroughly cooked and served hot; bottled water should be used for drinking as well as for brushing teeth and making ice. Vaccination should be considered when traveling in areas off the usual tourist itineraries.

COMMENTS: Los Angeles County is considered the source county for five cases (29%). Two of these cases were linked to a previously unknown carrier in the family who had lived in an endemic country. Three other cases had ties to an endemic country but denied recent travel or visitors. Of cases acquired outside the US, 8 (67%) acquired disease in Asia and 4 (33%) acquired disease in Central or South America.

Figure 90

Acute Typhoid Fever
Incidence Rates by Age Group
Los Angeles County,1998

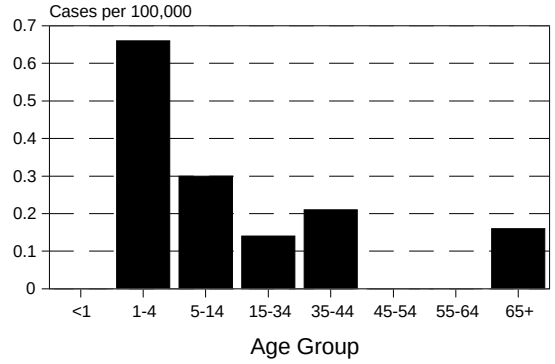
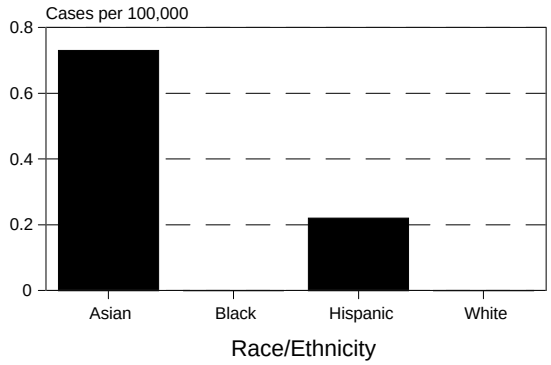


Figure 91

Acute Typhoid Fever
Incidence Rates by Race/Ethnicity
Los Angeles County, 1998



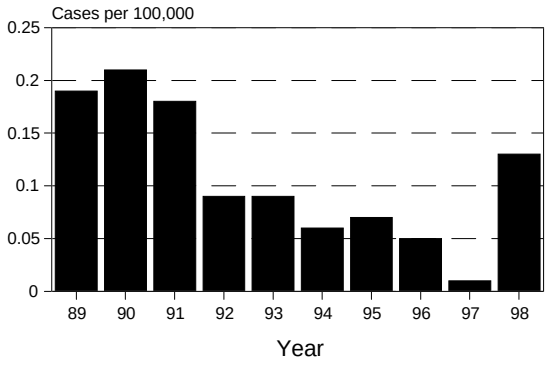
TYPHOID FEVER, CARRIER

CRUDE DATA	
Number of Cases	12
Annual Incidence[a]	
LA County	0.13
United States	N/A
Age at Diagnosis	
Mean	48
Median	41.5
Range	13-91
Case Fatality	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population.

Figure 92

Typhoid Fever Carriers
Rates by Year of Detection
Los Angeles County, 1989-1998



ETIOLOGY

Salmonella typhi, a gram-negative bacillus.

DISEASE ABSTRACT

The number of newly identified typhoid carriers rose from a low level of only one new carrier last year to a seven-year high of 12 carriers. In 1998, a total of 26 known carriers resided in LAC; seventy-seven percent of them emigrated from a country with endemic typhoid fever.

COMMENTS

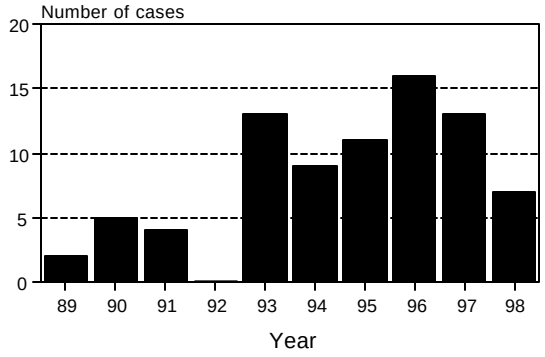
- In 1998, 12 newly diagnosed carriers more closely coincides with the numbers of newly diagnosed carriers prior to 1992 (Figure 92). Ten of the 12 are Hispanic and 2 are Asian.
- Most patients do not remember the date of acute onset.
- The carrier state is more common among women. Eighty-three percent (10)of the new carriers this year are female. Of the 26 being prospectively followed 81% (21) are female.
- Each identified carrier is added to a typhoid carrier registry and visited semi-annually by a public health nurse to determine compliance with a signed typhoid carrier agreement. Carriers are followed until they clear, die, or are transferred to another health jurisdiction.
- Ciprofloxacin was used to clear three carriers; two received no other medical/surgical intervention.

TYPHUS FEVER

CRUDE DATA	
Number of Cases	7
Annual Incidence[a]	
LA County	0.08
California	N/A
United States	N/A
Age at Onset	
Mean	35.6
Median	41
Range	6-70 yrs
Case Fatality	
LA County	0.0%
United States	N/A

Figure 93

Typhus Fever
Cases by Year
Los Angeles County, 1989-1998



[a]Cases per 100,000 population.

ETIOLOGY

Typhus fever (murine typhus, endemic typhus) is caused by a bacteria, *Rickettsia typhi*.

DISEASE ABSTRACT

Typhus fever reports have increased since 1993 (Figure 93),following a fatal case that year which may have led to increased awareness of the disease. In 1998, seven cases of typhus fever were reported. Symptoms include high fever, severe headache, myalgias, and sometimes a fine maculopapular rash. Occasionally, other complications may occur. Fatalities are uncommon, occurring in less than one percent of cases. Cases occur throughout the year, but more often in summer and fall.

Typhus fever is endemic in the foothills of central LAC. In 1998, three cases (43%) occurred in Central Health District, with one each in Foothill, Hollywood-Wilshire, Northeast and San Antonio Health Districts. Six (86%) of reported cases were hospitalized for an average of 5.7 days.

TRANSMISSION

Human infection most commonly occurs by introduction of infectious flea fecal matter into the bite site or adjacent areas which have been abraded by scratching. Typhus fever cannot be transmitted from person to person. Six of the 1998 cases recalled flea bites or contact with animals (dogs, cats, opossums and rats) that carry fleas.

COMMENTS

Each case of murine typhus is carefully interviewed regarding potential exposures. If possible, field studies of the property where exposure occurred and surrounding areas in the neighborhood are conducted. Local residents are contacted and provided with education about typhus and prevention of the disease by controlling fleas and eliminating harborage for typhus infected animals that carry fleas.

The nonspecific clinical presentation and the lack of a definitive test during the acute phase of the illness make the early diagnosis of murine typhus difficult. Thus, diagnosis of murine typhus depends on the clinical acumen of the treating physician, and is often confirmed after the patient has recovered. Accurate reporting of typhus or suspect typhus cases is important to identify endemic areas in LAC which can be monitored for the presence of disease in the animal populations and to institute control measures. Treatment with antibiotics hastens recovery and lessens the chance of complications.

ACUTE COMMUNICABLE DISEASE CONTROL
DISEASE OUTBREAK SUMMARIES

COMMUNITY-ACQUIRED OUTBREAKS

ABSTRACT

Los Angeles County (LAC) investigates all outbreaks that occur in community facilities which can include schools, day-care centers, private homes, restaurants and group homes among others. In 1998, a total of 168 community-acquired outbreaks were investigated, compared to 195 in 1997. Foodborne outbreaks (n=32) are analyzed separately due to their unique epidemiology and investigational procedures. The remaining 136 community-acquired outbreaks, which led to 1,141 illnesses and include GI illnesses that were not foodborne, are analyzed here.

DATA

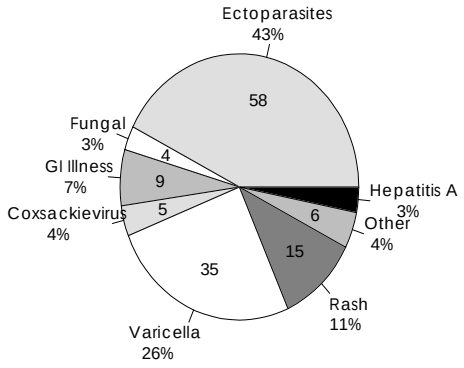
Disease outbreaks are defined as a cluster of cases that occur in a similar time or place, or an unusual number of cases above baseline in a specified area. Depending on the nature of the outbreak, investigation responsibility is held by either district health offices or by the Acute Communicable Disease Control Unit (ACD). ACD can also act as a consultant for district-led outbreak investigations.

Most of the reported community-acquired outbreaks in LAC were due to ectoparasites (43%) (scabies and pediculosis), and the varicella (chickenpox) virus (26%) (Figure 94). The "rash" category included cases of Fifth's disease and scarlet fever. Coxsackievirus refers to hand, foot and mouth disease.

Outbreaks of pediculosis and varicella contributed the highest number of cases overall. GI illnesses of unknown etiology had the highest number of cases per outbreak (Table 11), followed by pediculosis.

Figure 94

Community Outbreaks by Type of Disease
Los Angeles County, 1998
N = 136*



*Excludes 32 foodborne illnesses.

Figure 95

Community Outbreaks by Location
Los Angeles County, 1998
N=136

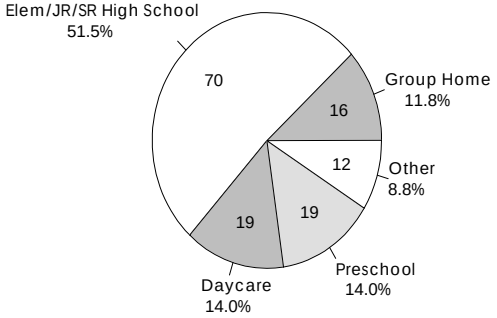


Table 11. Community Outbreaks by Disease, Los Angeles County, 1998*

Disease	Number of Outbreaks	Number of Cases	Avg. Cases per Outbreak	Range Low-High
Pediculosis	37	329	9	2-49
Scabies	21	132	6	2-35
Varicella	35	298	8	1-40
Coxsackievirus	5	20	4	2-8
Fungal diseases	4	28	7	6-9
GI illness - unknown etiology	4	114	28	8-92
GI illness - known etiology:			7	2-27
Shigella sonnei	1	27		
	1	4		
Shigella boydii	1	2		
Salmonella spp.	1	2		
Campylobacter spp.	1	6		
Giardia lamblia				
Rash	15	115	8	2-32
Hepatitis A	4	18	4	2-10
Other**	6	46	8	3-21
Total	**136**	**1,141**		

***Excludes foodborne outbreaks.**

****"Other" includes conjunctivitis, strep, stomatitis and viral meningitis.**

Table 12. Community Outbreaks, Disease by Setting Los Angeles County, 1998

Disease	GH	DC	SC	PS	OT	TOTAL
Pediculosis	1	3	26	5	2	**37**
Scabies	11	2	3	0	5	**21**
Varicella	3	3	19	8	2	**35**
Coxsackievirus	0	1	3	1	0	**5**
Fungal diseases	0	1	2	1	0	**4**
GI illness - unknown etiology	0	1	2	0	1	**4**
GI illness - known etiology	0	5	0	0	0	**5**
Rash	1	1	10	3	0	**15**
Hepatitis A	0	1	1	0	2	**4**
Other	0	1	4	1	0	**6**
Total	**16**	**19**	**70**	**19**	**12**	**136**

GH=Group home; DC=Day-care; SC =Elem/Jr/Sr high school; PS = Preschool; OT = Other.

The distribution of outbreaks by location is shown in Figure 95. The most common setting for outbreaks were schools (including elementary, junior and senior high schools), preschools and day-care centers. Further analysis showed that specific diseases cluster in these sites. The majority of pediculosis, varicella and rash outbreaks occurred in schools. Most outbreaks of scabies occurred in group homes, which included shelters, retirement communities, and nursing homes (Table 12).

COMMENTS

In 1998, there were fewer reported community-acquired outbreaks compared to 1997 in LAC. Of these outbreaks, ectoparasitic infections remained the most often reported. Elementary schools, day-care centers and preschools were the most common sites for reported outbreaks. In 1997 respiratory/strep was included as a separate category for outbreaks. However, there were not enough outbreaks like this in 1998 to warrant having their own category, and they were included in the "other" category. Since there were many cases of Fifth's disease and scarlet fever, they were given their own category under the heading "rash." Hepatitis A was also given its own category.

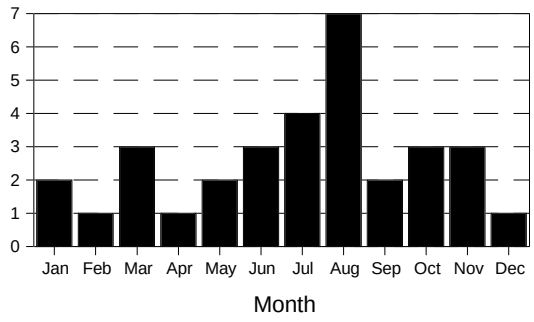
FOODBORNE OUTBREAKS

CRUDE DATA	
Number of Outbreaks	32
Number Ill	648
Annual Incidence:	
LA County[a]	7.1
California[b]	12.1

a
b Cases per 100,000 population, reported by onset year.
California Department of Health Services, 1998 stats, reported by report year.

Figure 96

Foodborne Outbreaks
by Month of Onset
Los Angeles County, 1998
N=32



ETIOLOGY

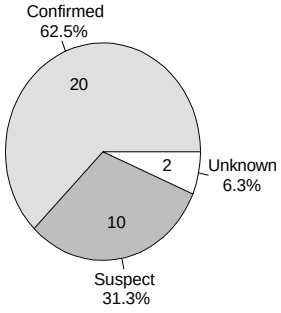
Foodborne outbreaks are caused by a variety of bacterial, viral, or parasitic pathogens, as well as non-infectious agents such as toxins.

DISEASE ABSTRACT

A total of 32 foodborne outbreaks in Los Angeles County (LAC) were investigated by LAC's Acute Communicable Disease Control (ACD) Unit in 1998. These outbreaks led to 648 cases of disease and were caused by a variety of pathogens.

Figure 97

Foodborne Outbreaks
by Laboratory of Confirmation
Los Angeles County, 1998
N=32



DATA

This is the second year ACDC has analyzed foodborne outbreaks in a separate report. These 32 outbreaks are defined as clusters of persons with illness related by time and place where food is the suspected vehicle of disease transmission. This report does not include **individual** cases of foodborne disease that may have occurred from such organisms as *Vibrio* spp., *Salmonella* spp., or *Campylobacter* spp.

Seasonality: Foodborne outbreaks often increase in summer. The peak month for 1998 occurred in August (Figure 96).

Agent: A majority of foodborne outbreaks were laboratory confirmed. In 1998, a specific pathogen was identified in 62.5% of the foodborne outbreaks (Figure 97). This represents a 16.8% increase from the previous year. In 31.3% of the outbreaks, investigators used clinical and epidemiologic evidence to classify outbreaks as "suspect" etiologic agent. This represents a 8.7% decrease in this classification from the previous year. Investigators classified remaining outbreaks (6.3%) with insufficient or conflicting information to "unknown" causes.

Table 13. Foodborne Outbreaks in Los Angeles County, 1998 (N=32)

O.B.	Etiologic Agent	# Affected	Implicated Food/Meal	Avg. Incub.
134	Ciguatera fish poisoning	8	Fish	12
206	*Salmonella spp.**	16	Unknown	14
144	*Salmonella cubana**	9	Alfalfa sprouts	-
9	*Salmonella enteritidis**	26	Unknown	22
59	*Salmonella enteritidis**	10	Unknown	-
61	*Salmonella enteritidis**	4	Unknown	12
86	*Salmonella enteritidis**	6	Eggs	-
118	*Salmonella enteritidis**	6	Hamburger	30
124	*Salmonella enteritidis**	4	Unknown	10
159	*Salmonella enteritidis**	5	Unknown	-
176	*Salmonella enteritidis**	15	Three-way salad	33
177	*Salmonella enteritidis**	4	Chicken salad, fettuccine, & mayo	6
185	*Salmonella enteritidis**	19	Unknown	24
203	*Salmonella enteritidis**	4	Unknown	24
145	*Salmonella havana**	6	Alfalfa sprouts	-
126	*Salmonella heidelberg**	200	Cake	18
122	*Salmonella newport**	16	Unknown	41
188	*Salmonella thompson**	17	Potato salad	16
127	*Shigella sonnei**	9	Parsley	36
132	*Shigella sonnei**	9	Parsley	30
116	Norwalk virus*	59	Unknown	36
68	Viral GI	7	Unknown	37
84	Viral GI	39	Unknown	35
101	Viral GI	16	Unknown	31
136	Viral GI	42	Unknown	18
199	Viral GI	9	Unknown	40
21	Viral GI	9	Unknown	37
123	Viral GI	20	Unknown	2
186	Viral GI	11	Potato salad	36
121	*Vibrio parahaemolyticus*	7	Unknown	-
120	Unknown	8	Unknown	-
119	Unknown	28	Unknown	-

*Laboratory confirmed.

-Unknown.

The etiologic agent most commonly confirmed in foodborne outbreaks was *Salmonella* spp. (51.5%), specifically *Salmonella enteritidis* (33.3%) followed by *Shigella sonnei* (6.1%) (Figure 98). The second most common cause of the outbreaks was suspect viral etiology (24.2%). These outbreaks were reported as viral based on symptoms, incubation, and duration of illness. In 1998, one outbreak was confirmed as Norwalk-like through special laboratory testing at CDC.

Duration: The graph (Figure 99) of duration of illness shows one peak between 1 and 2 days, for the 27 reports that documented duration of illness.

Incubation: The graph (Figure 100) of reported incubation periods from 26 outbreaks shows two peaks: at 7-16 hrs and 17-36 hours. These two groups roughly correspond to expected incubation periods for different types of foodborne outbreak agents: under 16 hours for the short-acting bacterial toxin agents, and >16 hours for the viral and bacterial agents which need to proliferate in the human gut to cause disease.

Food Establishment Type: Restaurant meals were responsible for the majority of known reported outbreaks followed by meals at private homes (Figure 101).

DISCUSSION

Public health nurses follow up individually reported cases of laboratory-confirmed *Salmonella*, *Shigella*, and *Campylobacter*. During the course of these investigations, foodborne outbreaks may be identified. With the current availability of commercial laboratory testing, outbreaks of a viral etiology must be reported as such by the victims or treating medical provider. A second mechanism for outbreak indentification is direct situational reporting by the people involved. Mild symptoms, long incubation periods, and poor public/medical community awareness of the public health procedures could lead to under-representation of foodborne outbreaks.

Figure 98
Foodborne Outbreaks
Etiologic Agents
Los Angeles County, 1998
N=32

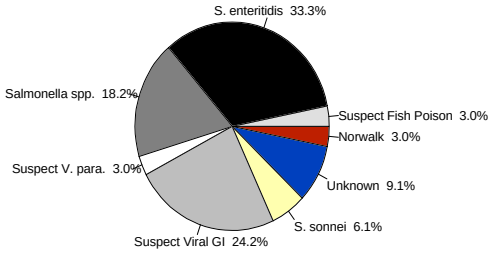


Figure 99
Foodborne Outbreaks
by Average Duration
of Illness, Los Angeles, 1998
N=27

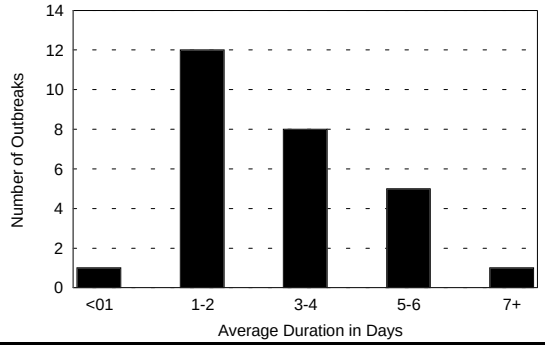
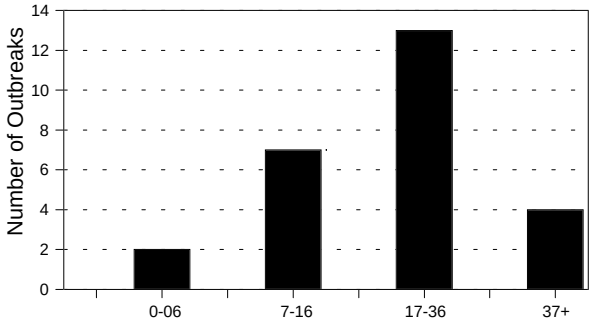


Figure 100
Foodborne Outbreaks
by Average Incubation
Los Angeles County, 1998
N=26

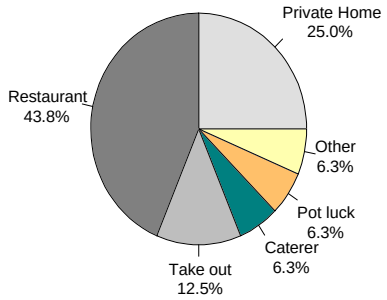


COMMENTS

It is clear from reported outbreak data that a variety of bacterial and viral pathogens, and many different meat, dairy, fruit and vegetable products caused the 1998 foodborne outbreaks in LAC. The etiologic agent was laboratory confirmed in more than half of the outbreaks. Eight of the outbreaks in 1998 were thought to be viral in nature. An additional outbreak was confirmed Norwalk-like virus. The Los Angeles Public Health Laboratory plans to add RT-PCR testing for caliciviruses in 1999, which should improve the percent of laboratory-confirmed foodborne outbreaks in the future.

Figure 101

Foodborne Outbreaks
By Establishment Type
Los Angeles County, 1998
N=32



* Other includes: choir and sorority kitchen

The Laboratory also has been added to the Pulse Net National Laboratory Surveillance System. Utilizing pulse-field gel electrophoresis (PFGE), disease isolates, which prior would seem sporadic in the past, now can be laboratory-linked, thus aiding in cluster identification.

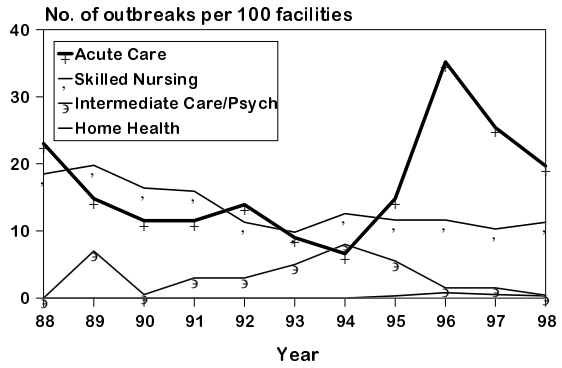
HEALTHCARE FACILITY OUTBREAKS

OUTBREAK DEFINITION AND ETIOLOGY

Outbreaks in healthcare organizations are defined as clusters of nosocomial (health-facility acquired) or home-healthcare-associated infections related in time and place or occurring above a baseline or threshold level for a facility or specific unit or ward.

Figure 102

Healthcare Facility Outbreaks
Los Angeles County, 1988-1998



ABSTRACT

During 1998, outbreaks reported by acute-care hospitals declined for a second year after a record high outbreak rate recorded in 1996 (Figure 102, Table 14). In the acute-care setting, outbreaks due to antimicrobial-resistant microorganisms and scabies continued to predominate. The outbreak rate in skilled-nursing facilities (SNFs) has stabilized over the past five years following a declining trend between 1989-93 (Figure 102).

Table 14. Reported Outbreaks Occurring in Los Angeles County* Healthcare Facilities, 1995-1998

Type of Healthcare Facility (Number of Facilities Licensed in 1998)	1995		1996		1997		1998	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Acute-Care Hospitals (n = 122)	18	(24.0)	43	(45.7)	31	(40.8)	24	(35.8)
Subacute Care								
Home-Health Agencies (n = 348)	1	(1.3)	3	(3.2)	2	(2.6)	1	(1.5)
Intermediate Care/Psych (n = 253)	11	(14.7)	3	(3.2)	3	(4.0)	1	(1.5)
Skilled-Nursing Facilities (n = 364)	45	(60.0)	45	(47.9)	40	(52.6)	41	(61.2)
Total	**75**	**(100)**	**94**	**(100)**	**76**	**(100)**	**67**	**(100)**

*Excludes facilities in Long Beach and Pasadena.

DATA

In acute-care hospitals, 24 outbreaks were reported (Table 14), a 23% decrease from 1997. Five hospitals reported more than one outbreak. Although acute-care outbreaks have declined in the past two years, the 24 outbreaks reported in 1998 represent a 71% increase since 1990. Nosocomial scabies outbreaks decreased from 11 in 1997 to only three in 1998, but accounted for 35% (108/308) of the acute-care outbreak-associated cases in 1998 (Table 15). Four outbreaks, involving a total of 74 cases, of infections or colonizations due to multidrug-resistant *Acinetobacter*

baumannii were reported in acute-care hospitals in 1998 (Table 15).

During 1998, 41 outbreaks were reported in skilled-nursing facilities and one each in intermediate care/psychiatric facilities and home-health agencies (Table 16). Three SNFs reported more than one outbreak. Although scabies outbreaks were the most frequently reported in subacute-care settings (22/43), this number has remained relatively stable since 1990. As in previous years, the outbreaks reported by intermediate-care facilities and home-health agencies were predominantly ectoparasitic infestations.

Table 15. Acute-Care Hospital Outbreaks by Disease/Condition
Los Angeles County, 1998

Disease/Condition/Etiologic Agent	Number of Outbreaks	Number of Cases
Acinetobacter baumannii	4	74
Methicillin-sensitive Staphylococcus aureus	4	29
Aspergillus species	3	25
Scabies	3	108
Vancomycin-resistant *Enterococcus sp.*	3	18
Methicillin-resistant *Staphylococcus aureus*	2	12
Enterobacter cloacae	1	10
Serratia marcescens	1	2
Trichosporon species	1	4
Gastroenteritis, unspecified	1	9
Ralstonia pickettii	1	17
Total	**24**	**308**

Table 16. Subacute-Care Setting* Outbreaks by Disease/Condition
Los Angeles County, 1998

Disease/Condition	Number of Outbreaks	Number of Cases
Scabies	22	81
Methicillin-resistant *S. aureus*	8	26
Gastroenteritis, unspecified	3	45
Varicella/zoster	3	8
Respiratory infection, unspecified	2	52
Salmonellosis	2	20
Clostridium difficile	1	5
Pediculosis pubis	1	3
Pneumonia, unspecified	1	2
Total	**43**	**242**

*Skilled-Nursing, Intermediate-Care/Psychiatric, Home Health.

COMMENTS

Hospital outbreaks are principally managed by hospital infection control practitioners and monitored by ACDC staff, with more extensive oversight provided for outbreaks in facilities with minimal infection control resources and those with higher morbidity or mortality potential. Community Health Services district staff have primary responsibility for disease investigations in subacute-care settings. The number of scabies outbreaks in acute-care hospitals decreased from 13 and 11 in 1996 and 1997, respectively, to only 3 in 1998. Distribution of ACDC's guideline for management of scabies in healthcare facilities and increased awareness of the potential for scabies transmission in the acute-care setting may have contributed to this decrease. Developing strategies to prevent and control the emergence and spread of antimicrobial-resistant microorganisms is a priority issue in both subacute and acute-care settings. This will require evaluating antimicrobial prescribing practices as well as continued emphasis on appropriate infection control practices.

ACDC staff conducted two in-depth investigations of outbreaks due to extrinsically-contaminated sterile saline solutions in 1998, one involving respiratory tract colonization with *Ralstonia pickettii* of infants in a neonatal intensive care unit and the other involving *Enterobacter cloacae* blood stream infections in pediatric oncology patients. Descriptions of these investigations can be found in the *Acute Communicable Disease Control Special Studies Report, 1998.*

HIV EPIDEMIOLOGY PROGRAM

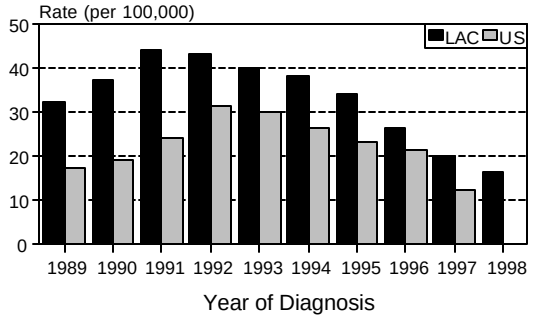
ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

CRUDE DATA	
Number of Cases	1,462
Annual Incidence[a]	
LA County	16.1
California	12.8
United States	17.2
Age at Onset	
Mean	38.4
Median	37.0
Range	4 mos-84 yrs
Case Fatality	
LA County[b,c]	63%
United States[c]	60%

[a] Rate per 100,000 population.
[b] Case-fatality rate increases with duration of illness; for persons diagnosed with AIDS in 1998, 12% have died.
[c] Case-fatality rate for recent LAC & US data is prone to underestimation due to delayed mortality reporting.

Figure 103

AIDS
Incidence Rates by Year
LAC and US,* 1989-1998



*1998 US data is unavailable

ETIOLOGY

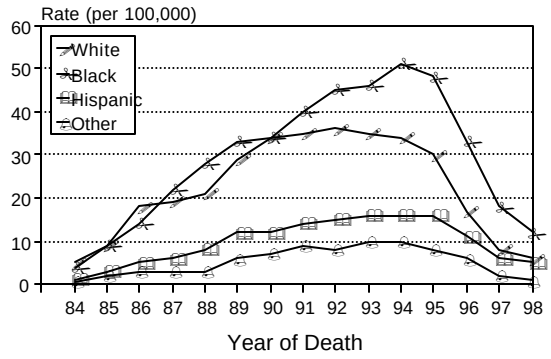
AIDS is a defined syndrome requiring two components: human immunodeficiency virus type 1 (HIV-1), plus either (a) at least one AIDS-defining condition or (b)a T-lymphocyte count below 200 cells/μliter.

DISEASE ABSTRACT

AIDS rates in Los Angeles County (LAC) continued to decline between 1997 and 1998. Incidence rates declined among Asians, Blacks, Whites and Hispanic and American Indian males, and stayed stable among Hispanic women. The epidemic continues to be concentrated most heavily among men who have sex with men. The highest AIDS rates occurred in the Central and Hollywood-Wilshire Health Districts. AIDS-related mortality declined among all racial groups (Figure 104).

Figure 104

AIDS-Related Mortality Rates by Race/Ethnicity and Year of Death
Los Angeles County, 1984-1998



STRATIFIED DATA

Trends: The reported annual incidence rate of

AIDS in LAC decreased 20% from 20 per 100,000 in 1997 to 16 per 100,000 population in 1998 (Figure 103). AIDS-related mortality declined 23%, from 7 per 100,000 in 1997 to 5 per 100,000 in 1998. This decrease in mortality occurred among both males (26%) and females (10%) and among all racial/ethnic groups (Figure 104).

Seasonality: None noted.

Age: In 1998, age-specific rates were higher among males than females for all age categories (Figure 105). Among males, the highest rates were reported in the 35- to 44-year-old age group (74 per 100,000) followed by the 45- to 54-year-old age group (50 per 100,000). Among females, the highest rate (9 per 100,000) was among the 35- to 44-year-old age group.

Sex: Of the 1,462 AIDS cases diagnosed in 1998, 89% were males. The incidence rate was 29 per 100,000 among males and 4 per 100,000 among females. The male-to-female rate ratio was 8:1. The incidence rate of AIDS decreased 17% among males and 30% among females from 1997 to 1998 (Figure 106).

Figure 105
AIDS
Incidence Rates by Age and Sex
Los Angeles County, 1998

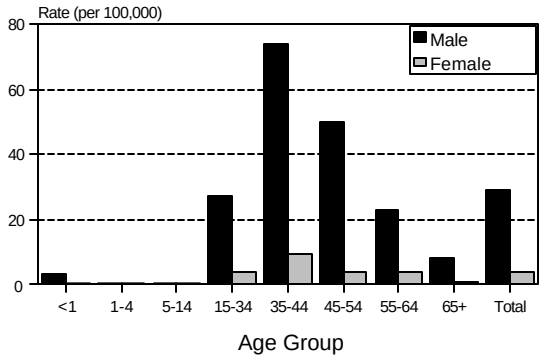
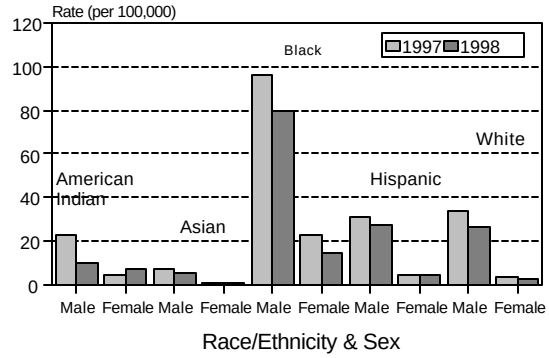


Figure 106
AIDS
Incidence Rates by Race/Ethnicity & Sex
Los Angeles County, 1997 - 1998



Race/Ethnicity: Blacks had the highest AIDS rate in 1998 among males (80 cases per 100,000). The rates among other males were 26 per 100,000 for Whites, 27 per 100,000 for Hispanics, 5 per 100,000 for Asians, and 10 per 100,000 for American Indians and Alaskan Natives (Figure 106). Blacks had the highest AIDS rates in 1998 among females (14 per 100,000). The rates among other females were 3 per 100,000 for Hispanics, 2 per 100,000 for Whites, 0.4 per 100,000 for Asians, and 7 per 100,000 for American Indians and Alaskan Natives. The largest proportion of AIDS cases (44%) occurred among Hispanics; 28% occurred among Whites, 25% among Blacks, 2% among Asians and 0.3% among American Indians.

Location: The highest AIDS rates were in the Central Health District (68 per 100,000) and the Hollywood-Wilshire District (62 per 100,000)(Map 13)**.**

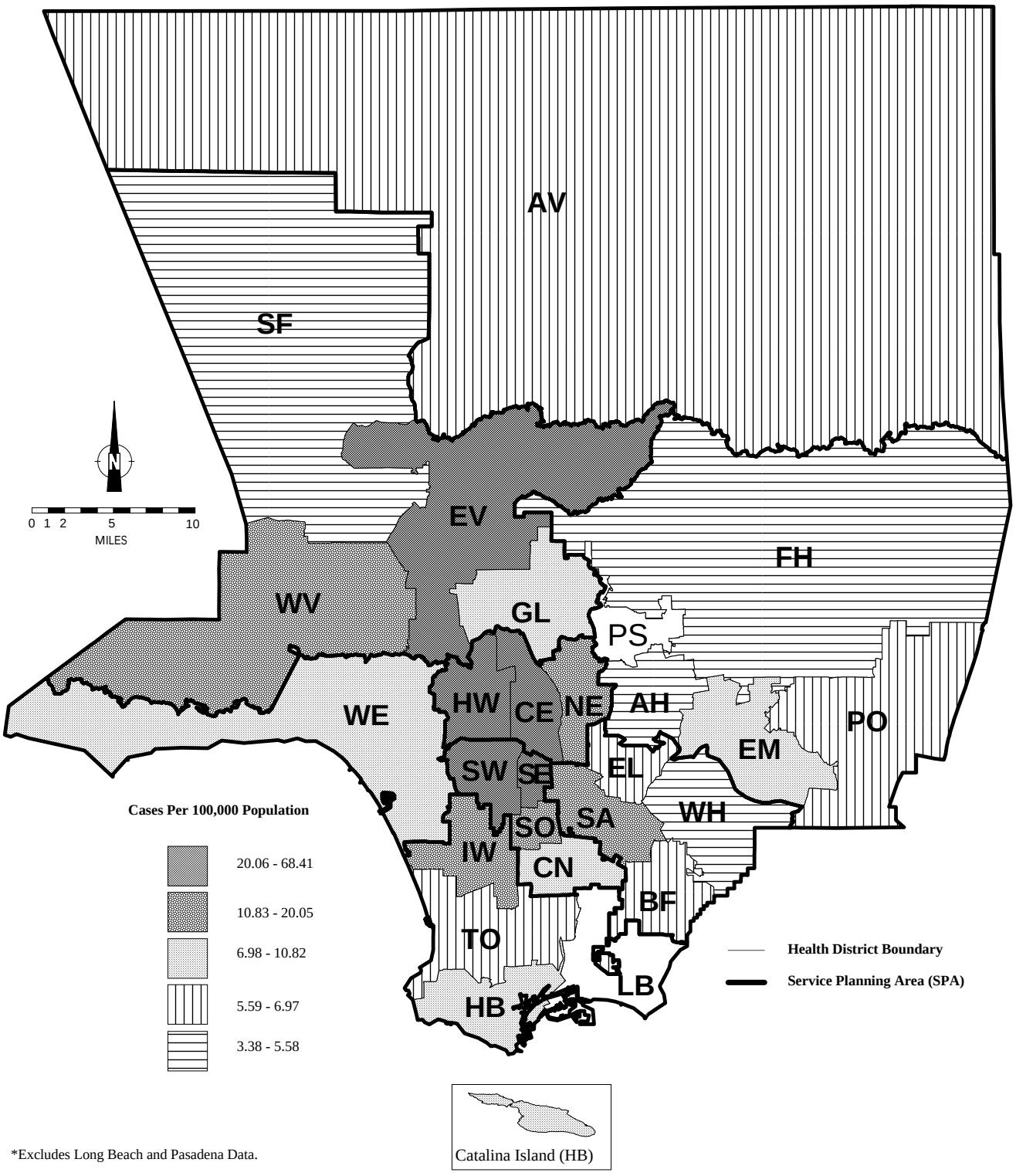
Transmission: Among males diagnosed with AIDS in 1998, 60% reported having sex with men, 6% reported injection drug use, 4% reported both sex with men and injection drug use, and 4% reported other risk factors. No risk factors could be identified for 27% of males.

Heterosexual contact was the predominant mode of transmission among women diagnosed with AIDS in 1998 : 40% were heterosexual contacts of a person with HIV infection or AIDS. In addition, 17% were injection drug users, and 1% reported other risk factors. No risk factors could be identified for 42% of females. One of the two pediatric AIDS cases (age<13) diagnosed in 1998 was infected by perinatal exposure to an HIV-infected mother; no risk could be identified for the other.

COMMENTS

Although there have been decreases in AIDS incidence and mortality since the widespread use of highly active antiretroviral therapy (HAART), these decreases have not been as great for Blacks and Latinos compared to Whites. Epidemiologic data suggest that Blacks and Latinos are not getting tested for HIV as early in the course of their infection when compared to Whites, and are, therefore, not benefitting as greatly from the recent treatment advances.

MAP 13. AIDS
Rates by Health District, Los Angeles County, 1998*



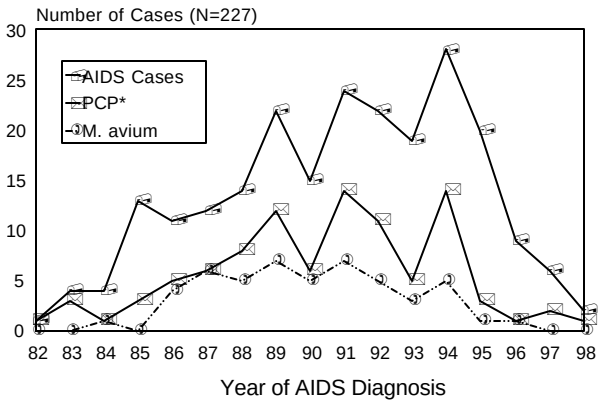
*Excludes Long Beach and Pasadena Data.

PEDIATRIC ACQUIRED IMMUNODEFICIENCY SYNDROME

CRUDE DATA	
Number of Cases	2
Annual Incidence[a]	
LA County	0.10
California	0.26
United States	0.66
Age at Onset	
Mean	11 mos
Median	11 mos
Range	4 mos-18 mos
Case Fatality[c]	
LA County	64%
California	64%
United States	59%

Figure 107

Pediatric AIDS Cases
Los Angeles County, 1982 to 1998



** Pneumocystis carinii pneumonia*

[a]Cases per 100,000 population.

ETIOLOGY

A syndrome caused by *human immunodeficiency virus,* type 1 (HIV-1). A pediatric AIDS case is a child <13 years of age with a CDC surveillance case definition of AIDS. AIDS is defined as an illness characterized by one or more indicator diseases, and based on laboratory evidence of HIV infection.

DISEASE ABSTRACT

Pediatric AIDS cases are reported to Los Angeles County (LAC) through an active surveillance system. Residents of LAC diagnosed with AIDS are reported to the State Office of AIDS HIV infection is not reportable in the State of California, even though these children are followed up from birth through 18 months of age. Based on the year of AIDS diagnosis, 227 pediatric AIDS cases were diagnosed between 1982 and 1998. Trends in AIDS-defining diseases show that between 1982 and 1998, 96 (42.3%) cases were diagnosed with *Pneumocystis carinii* pneumonia (PCP), and 50 (22%) were diagnosed with *Mycobacterium avium*. In 1991, 1992, and 1994, 14 (58.3%), 11 (50%), and 14 (50%) of the cases were diagnosed with PCP, respectively. During the same years, 7(29.2%), 5 (22.7%), and 5 (17.9%) of the cases were diagnosed with *M. avium* (Figure 107). Of the 227 diagnosed cases, 28 (12%) were diagnosed in 1994. This was followed by a decline in the number of newly diagnosed cases among HIV-infected children. This decline is due to earlier identification of HIV-exposed children, prevention of perinatal transmission, and use of drug therapies which delay the incidence of AIDS-defining illnesses, as well as the screening of blood supply.

DATA

The age range of cases at diagnosis was between 4 months and 18 months. The mean and median age was 11 months. The male-to-female ratio was 2:0. Both cases were Black. AIDS-defining illnesses among the two cases were esophageal candidiasis; in addition, one case had presumptive PCP, and one case had HIV encephalopathy.

COMMENTS

The cases reported in 1998 were infected perinatally from mothers who had HIV or AIDS during their pregnancy.

Although an estimated 188 HIV-positive women delivered infants in 1998, with appropriate treatment only 2% became infected. Some of these infants may not be symptomatic later in life.

PUBLICATIONS LIST

1. Lopez J, Welvaart H, Ford W, Kerndt P. HIV prevalence and risk behaviors among patients attending Los Angeles County tuberculosis clinics:1993-1996. *Ann Epidemiol* 1998;8:168-174.

2. Sorvillo F, Beall G, Turner PA, Beer VL, Kovacs AA, Kraus P, Masters D, Kerndt PR. Seasonality and factors associated with cryptosporidiosis among individuals with HIV infection. *Epidemiol Infect* 1998;121:197-204.

3. Wohl AR, Lu S, Odem S, Sorvillo F, Pegues CF, Kerndt PR. Sociodemographic and behavioral characteristics of African-American women with HIV and AIDS in Los Angeles County, 1990-1997. *J Acquir Immune Defic Syndr Hum Retrovirol* 1998;19:413-420.

4. Sorvillo F, Kovacs A, Kerndt P, Stek A, Muderspach L, Sanchez-Keeland L. Risk factors for trichomoniasis among women with human immunodeficiency virus (HIV) infection at a public clinic in Los Angeles County, California: implications for HIV prevention. *Am J Trop Med Hyg* 1998;58:495-500.

SEXUALLY TRANSMITTED DISEASE CONTROL PROGRAM

CHLAMYDIAL INFECTION

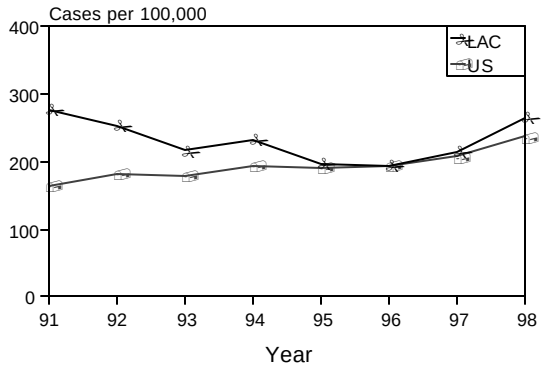
CRUDE DATA	
Number of Cases	24,142
Annual Incidence[a]	
LA County	265.4
California	228.5
United States	236.6
Age at Onset	
Mean	23
Median	22
Range	1-96 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a] Cases per 100,000 population. U.S. and California rates are provisional.

Figure 108

Chlamydia Incidence by Year

LAC and US, 1991-1998



ETIOLOGY

Chlamydia trachomatis, a sexually transmitted, gram-negative, obligate intracellular bacterium.

DISEASE ABSTRACT

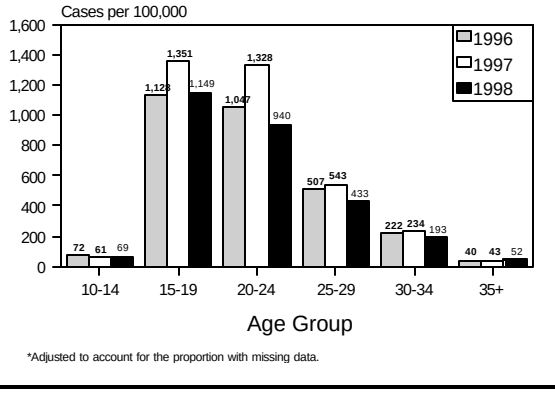
The overall chlamydia rate increased by 4.4% from 1997 to 1998.

STRATIFIED DATA

Trends: The STD Program received 24,142 case reports of genital chlamydial infection in 1998, an increase of 4.9% over 1997, when 23,021 cases were reported (Figure 108). Chlamydia incidence is approximately four times the combined incidence of gonorrhea and syphilis. During the eight years since it became a reportable disease in California, the overall chlamydia rate has ranged from a high of 276 cases per 100,000 in 1991 to a low of 213 cases per 100,000 in 1995. However, patterns in chlamydia rates may be influenced by frequency of screening or by greater compliance with reporting requirements by health care providers and laboratories.

Figure 109

Chlamydia
Incidence Rates* by Age
Los Angeles County, 1996 - 1998



*Adjusted to account for the proportion with missing data.

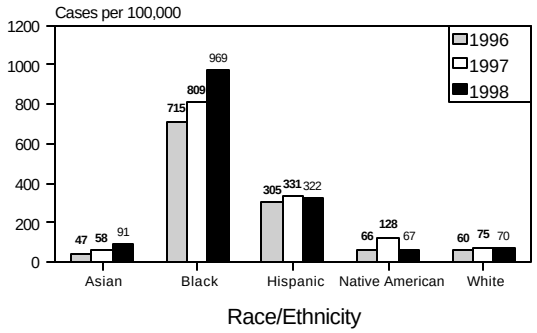
Seasonality: None

Age: Adolescents and young adults aged 15-24 account for 64% of all reported cases. The highest age-specific rates of chlamydia were seen among 15- to 19-year-olds (1,149 cases per 100,000) and 20- to 24-year-olds (940 cases per 100,000; Table 17; Figure 109).

Sex: The male-to-female rate ratio in 1998 was 1:3.6. This difference arises partially due to gender-specific screening protocols; asymptomatic female cases are often discovered during routine screening for other purposes, such as visits to prenatal care and family planning clinics, while asymptomatic male cases often go undiagnosed.

Figure 110

Chlamydia
Incidence Rates* by Race/Ethnicity
Los Angeles County, 1996 - 1998



*Adjusted to account for the proportion with missing data.

Race: Blacks had the highest chlamydia rate (969 cases per 100,000), followed by Hispanics (322), Asians (92), Whites (70), and Native Americans (66;Table 17 and Figure 110). These rates are little affected when age-adjusted.

Location: There are six "core" health districts where social and economic factors play an important role in producing relatively higher risks of contracting STDs. In these districts - Central, Compton, Inglewood, South, Southeast, and Southwest — Disease Intervention Specialists (DIS) play central roles in case investigation and management, partner notification and treatment, and STD health education. While gonorrhea and syphilis rates are typically higher in "core" districts, only about a third of the reported chlamydia cases were detected from these core districts (Table 18). However, overall incidence rate in these six districts was double that of the non-core districts (442 vs. 224 cases per 100,000).

COMMENTS

A recent analysis conducted by the STD Program demonstrated that 38% of 1998 chlamydia cases were reported by both the laboratory and the provider, 54% were reported only by clinical laboratories, and 8% were reported only by providers. Substantial underreporting of chlamydia continues in part because providers are unaware of their reporting responsibilities and, if aware, non-compliant with California reporting requirements.

Recent advances in STD diagnostic technology now permit the use of urine specimens for the detection of chlamydia. These highly sensitive assays (e.g., PCR and LCR) eliminate the need for urethral swab collection in men and pelvic examinations in women. This should result in the detection of many more asymptomatic cases, and may lead to an increase in reported chlamydia cases in the future. In LAC, 15% of chlamydia tests in 1998 were performed using amplification-based assays.

Table 17. Chlamydia Cases and Rates by Race/Ethnicity, Gender, and Age
Los Angeles County, 1997-1998

	Number of Cases		Rate[a]		Percent Change in Rate[b]
	1998	1997	1998	1997	
Race/Ethnicity					
American Indian	23	32	66.4	128.3	-48
Asian	576	378	91.7	58.8	56
Black	4,445	3,717	969.3	808.6	20
Hispanic	7,717	7,459	321.9	331.1	-3
White	1,230	1,248	70.4	74.9	-6
Unknown	10,151	10,187	--	--	--
Gender					
Male	5,178	5,323	115.5	118.1	-2
Female	18,759	17,682	413.5	389.5	6
Unknown	205	16	--	--	--
Age					
0-9	51	78	3.5	5.1	-31
10-14	405	415	68.5	61.2	12
15-19	7,712	7,406	1149.1	1,351.2	-15
20-24	7,722	7,224	939.9	1,328.2	-29
25-29	4,104	3,743	433.6	543.0	-20
30-34	1,917	1,833	193.3	233.8	-17
35+	1,813	1,756	52.3	43.2	21
Unknown	418	566	--	--	--
County Total	**24,142**	**23,021**	**265.4**	**254.3**	**4**

[a]Cases per 100,000 population per year. Estimates of race-, sex- and age-specific rates have been adjusted to account for the proportion of cases with missing data by assuming that each sub-category's proportions of the known and unknown cases are equivalent. An STD Program study showed no significant difference in demographic characteristics between known and unknown chlamydia and gonorrhea cases.

[b]Rates are not comparable between 1997 and 1998 due to age and race/ethnicity changes in the method of population estimation.

Table 18. Chlamydia Cases and Rates by Health District
Los Angeles County, 1997-1998

	Number of Cases		Rate[a]		Percent Change
	1998	1997	1998	1997	in Rate
Health District					
South[b]	1,022	994	709.7	723.8	-2
Southwest[b]	1,988	1,836	674.9	617.9	9
Southeast[b]	733	634	567.8	520.6	9
Compton[b]	1,199	1,188	518.3	519.8	0
Inglewood[b]	1,616	1,553	482.2	459.5	5
Central[b]	1,028	934	420.4	380.5	10
Northeast	813	816	282.8	291.8	-3
Hollywood-Wilshire	1,271	1,159	317.6	286.8	11
San Antonio	1,054	982	296.1	280.6	6
East Los Angeles	476	515	264.0	280.4	-6
East Valley	907	869	252.2	250.3	1
Harbor	334	400	203.1	241.3	-16
El Monte	850	817	220.7	208.7	6
West Valley	1,240	1,206	194.7	196.2	-1
Bellflower	600	542	204.5	183.0	12
Whittier	476	492	178.6	184.2	-3
Torrance	590	591	160.4	157.7	2
Pomona	745	689	164.7	152.6	8
San Fernando[c]	990	912	170.1	164.5	3
Foothill	413	358	162.7	138.5	17
West	771	682	148.3	132.9	12
Glendale	291	352	106.1	124.2	-15
Alhambra	391	369	129.7	114.9	13
Unknown District	4,344	4,131	--	--	--
County Total	**24,142**	**23,021**	**265.4**	**254.3**	**4**

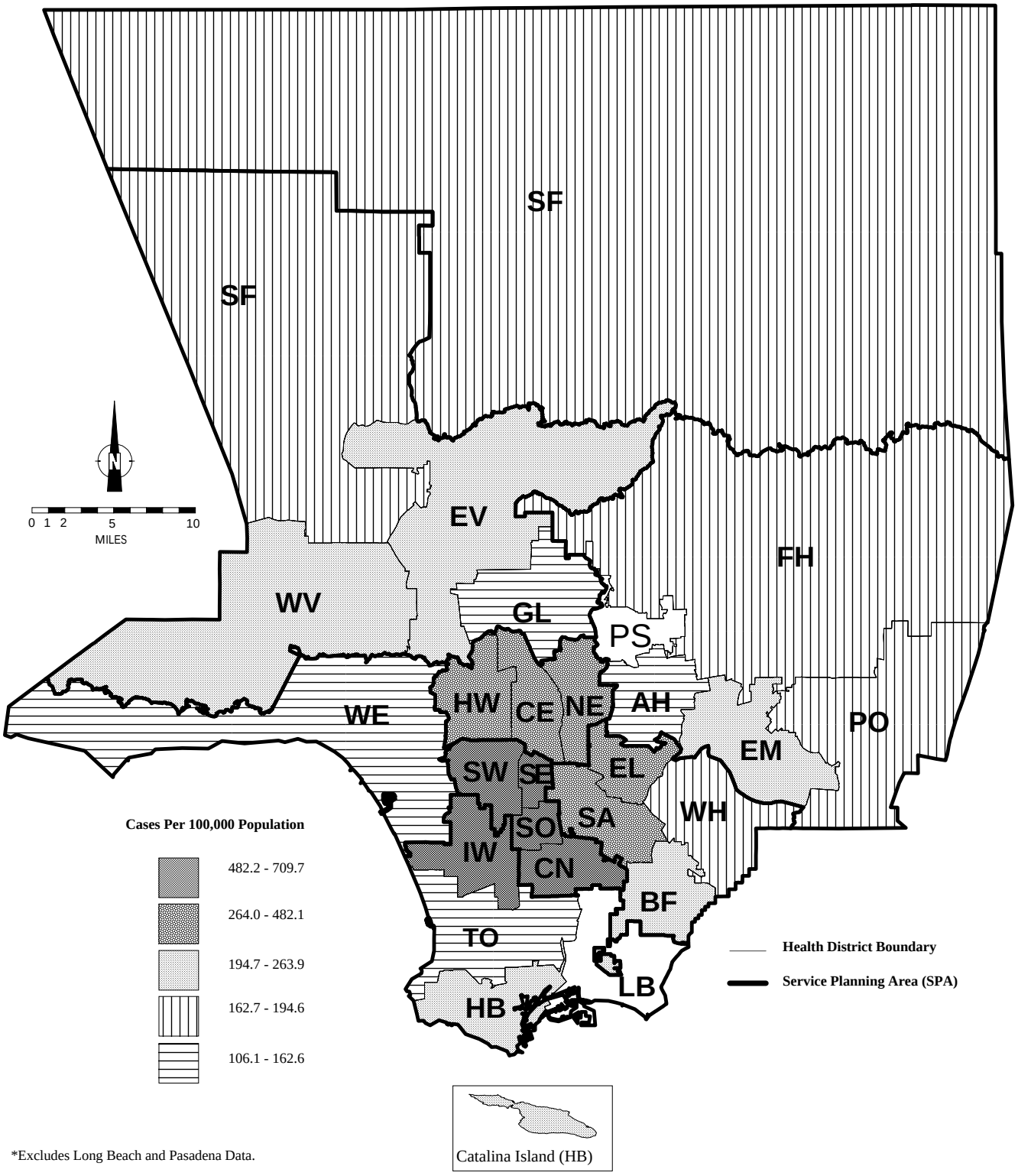
[a] Cases per 100,000 population per year. Estimates of district-specific rates have been adjusted to account for the proportion with missing data by assuming that each district's proportions of the known and unknown cases are equivalent.

[b] Core district.

[c] Includes Antelope Valley.

MAP 14. Chlamydia

Rates by Health District, Los Angeles County, 1998*



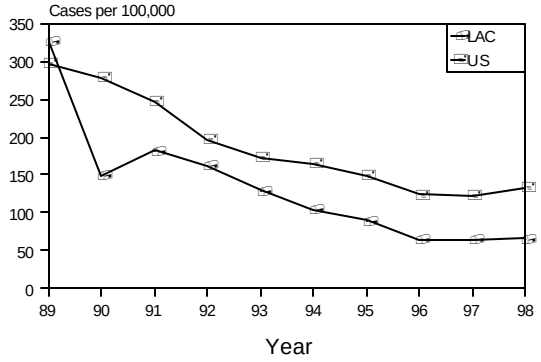
*Excludes Long Beach and Pasadena Data.

GONORRHEA

CRUDE DATA	
Number of Cases	5,980
Annual Incidence[a]	
LA County	65.7
California	59.5
United States	132.9
Age at Onset	
Mean	27
Median	24
Range	2-80 yrs
Case Fatality	
LA County	0.0%
United States	N/A

[a] Cases per 100,000 population.

Figure 111
Gonorrhea
Incidence by Year
LAC and US, 1989-1998



ETIOLOGY

Neisseria gonorrhoeae, a sexually transmitted gram-negative diplococcus.

DISEASE ABSTRACT

The overall County gonorrhea rate increased slightly from 1997 to 1998. Distribution of cases by age, race and gender in 1998 was similar to that of previous years.

STRATIFIED DATA

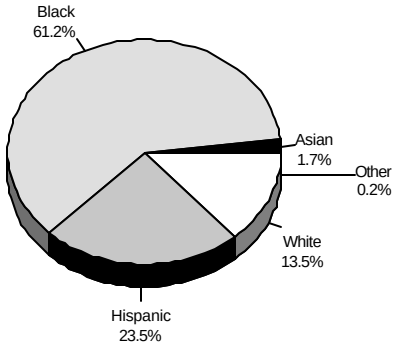
Trends: After an eleven-year decline, the rate of reported gonorrhea cases stabilized after 1996 (Figure 111). The rate in 1998, however, increased 2% over 1997.

Seasonality: None.

Age: Adolescents and young adults 15 to 24 years old comprised half of all reported cases. Incidence in the 15- to 19- year-old and the 20- to 24- year-old groups (216 and 182 cases per 100,000 population, respectively) remains much higher than in other age groups.

Sex: The male-to-female rate ratio was 1.1:1 in 1998, with rates in males remaining at 1997 levels. Rates in females, however, increased 5% since 1997. Although women are more likely to be screened routinely for gonorrhea, more intense symptoms in infected males result in

Figure 112
Gonorrhea
Cases by Race/Ethnicity
Los Angeles County, 1998



males being more likely to be diagnosed.

Race/Ethnicity: Rates in all racial/ethnic groups increased. A disproportionate burden of disease occurred in the Black population. The rate among Blacks was 17 times greater than for Whites and over 13 times greater than for Hispanics (Figure 112). These ratios were not affected by controlling for age.

Location: Seven health districts (South, Southwest, Inglewood, Compton, Southeast, Central and Hollywood-Wilshire) accounted for 52% of the gonorrhea cases in 1998, reflecting ethnic/racial and socioeconomic status differences in gonorrhea incidence. While gonorrhea rates increased in 1998 in 14 health districts, rates decreased in eight districts. The districts with largest increases were Whittier (36%), Alhambra (29%), East Valley (28%), and Glendale (25%) while the largest decreases were in Harbor (-23%), Central (-17%), San Fernando (-17%) and South (-16%).

COMMENTS

A recent advance in STD diagnostic technology now permits the use of urine specimens for the detection of gonorrhea. This highly sensitive assay, ligase chain reaction (LCR), eliminates the need for urethral swab collection in men, and can facilitate widespread screening in high-risk populations such as jail inmates. This should result in the detection of many more asymptomatic cases.

Table 19. Gonorrhea Cases and Rates by Race/Ethnicity, Gender, and Age
Los Angeles County, 1997-1998

	Number of Cases		Rate[a]		Percent Change in Rate[b]
	1998	1997	1998	1997	
Race/Ethnicity					
Asian/Pacific Islander	64	48	9.0	6.1	47
Black	2,368	2,529	462.3	452.5	2
Hispanic	908	863	33.9	31.5	8
White	523	509	26.8	25.1	7
Other	8	3	20.7	6.7	209
Unknown	2,109	1,876	--	--	--
Gender					
Male	3,178	3,173	70.6	70.4	0
Female	2,778	2,650	61.0	58.3	5
Unknown	24	2	--	--	--
Age Group					
0-9	15	24	1.0	1.6	0
10-14	85	81	14.5	11.9	22
15-19	1,444	1,369	215.5	249.2	-14
20-24	1,491	1,291	181.8	236.9	-23
25-29	1,038	1011	109.9	146.3	-25
30-34	750	771	75.7	98.1	-23
35+	1,045	1,147	30.2	28.2	7
Unknown	112	131	--	--	--
County Total	**5,980**	**5,825**	**65.7**	**64.4**	**2**

[a] Cases per 100,000 population. Estimates of race-, gender- and age-specific rates have been adjusted to account for the proportion of cases with missing data by assuming that each sub-category's proportions of the known and unknown cases are equivalent. A study conducted by the STD Program showed no significant difference in demographic characteristics between known and unknown chlamydia and gonorrhea cases.

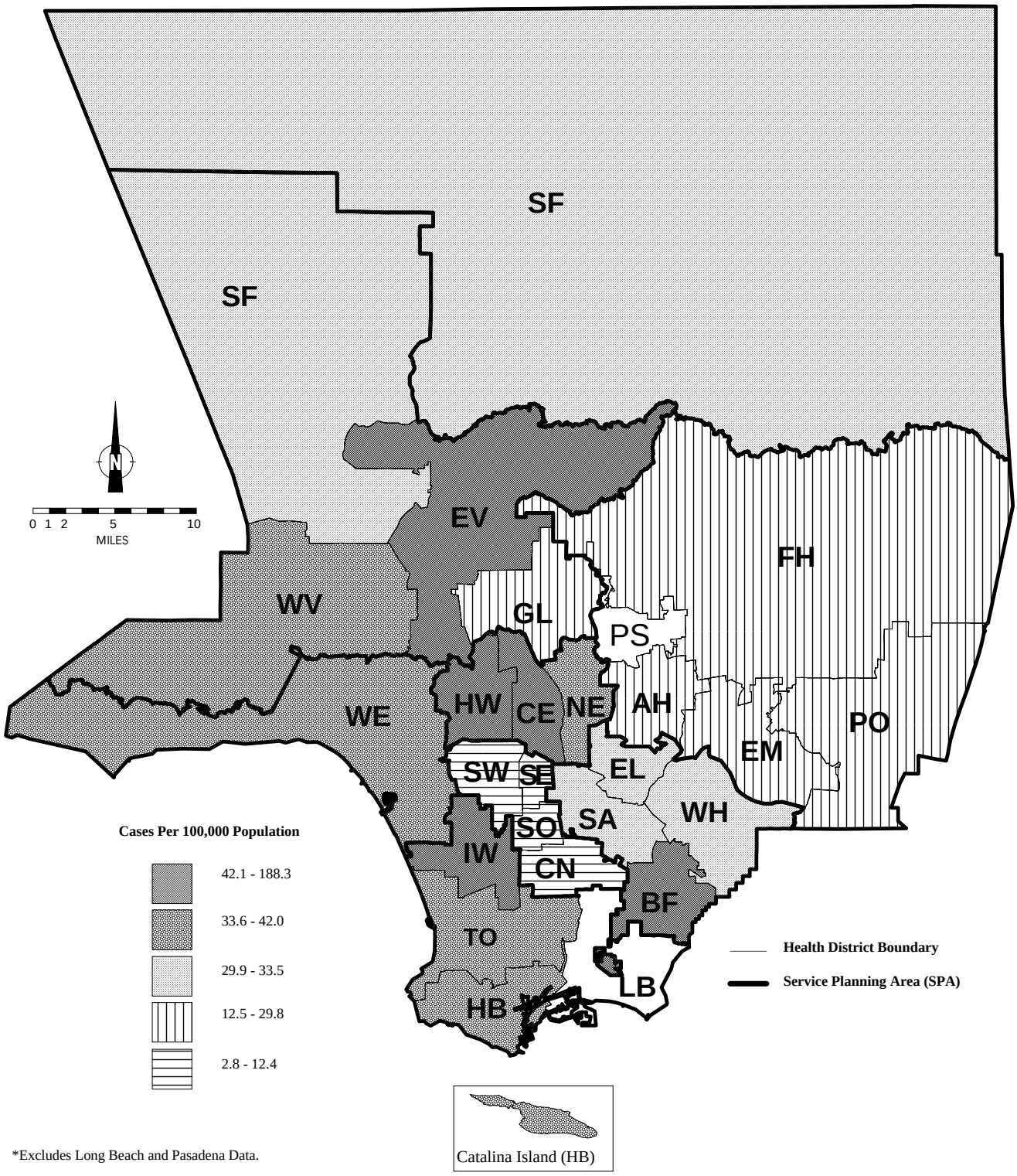
[b] Rates are not comparable between 1997 and 1998 due to age and race/ethnicity changes in the method of population estimation.

Table 20. Gonorrhea Cases and Rates by Health District
Los Angeles County, 1997-1998

	Number of Cases		Rate[a]		Percent Change
	1998	1997	1998	1997	in Rate
Health District					
South[b]	386	446	265.4	316.8	-16
Southwest[b]	692	770	232.7	252.6	-8
Inglewood[b]	637	605	188.3	174.5	8
Southeast[b]	174	192	133.5	153.5	-13
Compton[b]	421	358	180.2	152.9	18
Hollywood-Wilshire	578	537	143.1	129.6	10
Central[b]	242	297	98.0	118.0	-17
Harbor	60	80	36.1	47.1	-23
Bellflower	137	116	46.2	38.2	21
West	194	200	37.0	38.1	-3
Northeast	106	108	36.5	37.6	-3
Torrance	139	140	37.4	36.4	3
San Fernando[c]	212	204	29.9	36.0	-17
East Valley	153	117	42.1	32.8	28
West Valley	216	180	33.6	28.6	18
East Los Angeles	55	51	30.2	27.2	11
San Antonio	116	94	32.3	26.3	23
Pomona	116	118	25.4	25.4	0
Foothill	64	66	25.0	24.8	1
Whittier	83	62	30.8	22.6	36
El Monte	76	79	19.5	19.7	-1
Glendale	57	48	20.6	16.5	25
Alhambra	38	32	12.5	9.7	29
Unknown District	1,028	925	--	--	--
County Total	**5,980**	**5,825**	**65.7**	**64.4**	**2**

[a] Cases per 100,000 population. Estimates of district-specific rates have been adjusted to account for the proportion with missing data by assuming that each district's proportions of the known and unknown cases are equivalent.
[b] Core district.
[c] Includes Antelope Valley.

MAP 15. Gonorrhea
Rates by Health District, Los Angeles County, 1998*



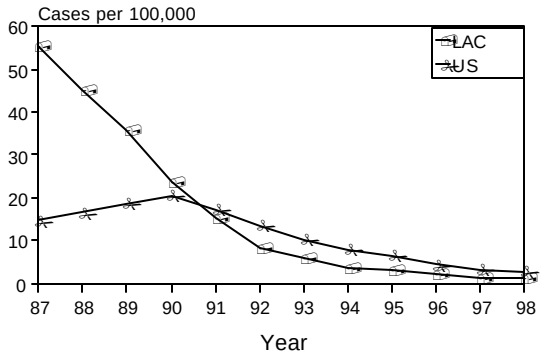
*Excludes Long Beach and Pasadena Data.

SYPHILIS, PRIMARY AND SECONDARY

CRUDE DATA	
Number of Cases	112
Annual Incidence[a]	
LA County	1.2
California	1.0
United States	2.6
Age at Onset	
Mean	34
Median	34
Range	13-72 yrs
Case Fatalities	
LA County	0.0%
United States	N/A

[a]Cases per 100,000 population. U.S. and California rates are provisional.

Figure 113
Primary and Secondary Syphilis
Rates by Year
LAC and US, 1987-1998



ETIOLOGY

Treponema pallidum, a sexually transmitted spirochete bacterium.

DISEASE ABSTRACT

In 1998, reports of primary and secondary syphilis, i.e., symptomatic syphilis, rose for the first time since the syphilis epidemic peaked in 1987 (Figure 113). Nonetheless, syphilis morbidity remains at levels lower than those achieved by the national campaign against syphilis in the 1950s.

STRATIFIED DATA

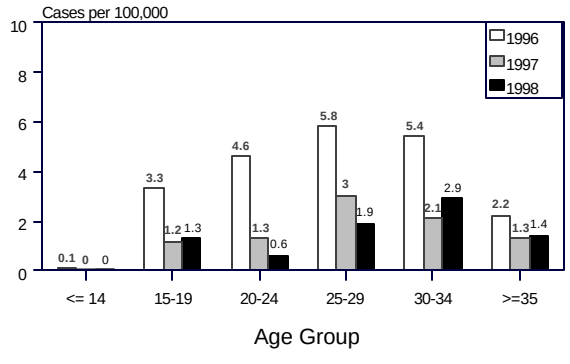
Trends: After a 50% decline between 1996 and 1997, the rate leveled off between 1997 and 1998 (Table 22).

Seasonality: None.

Age: Primary and secondary syphilis cases traditionally occur in patients five to ten years older than those with other STDs. The median age of cases increased in 1998 due to increases in incidence occurring among those 30 years and older (Figure 114).

Sex: Because males are more likely than females to respond to early signs of syphilis by seeking treatment, primary and secondary cases have typically been two-thirds male. In

Figure 114
Primary and Secondary Syphilis
Rates by Age Group
Los Angeles County, 1996-1998

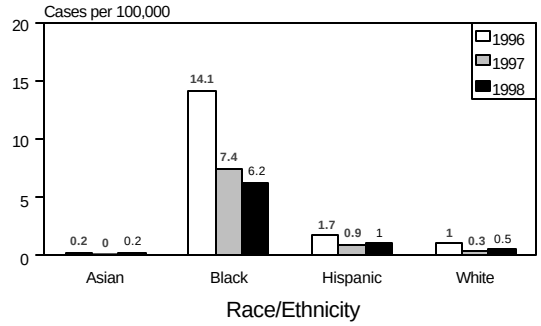


1998, that proportion decreased to 60% primarily due to an increase in the number of female cases. As a result, the male-to-female rate ratio decreased from 2.3:1 to 1.4:1 (Table 21).

Race/Ethnicity: The decline in rates of primary and secondary syphilis since the peak of the epidemic in 1987 that had occurred across all racial/ethnic groups continued among Blacks, but among the others there were marginal increases (Table 21; Figure 115). Rates among Blacks remain highest of all ethnic groups. Reported syphilis among Asians/Pacific Islanders remains very low.

Figure 115

Primary and Secondary Syphilis
Rates by Race/Ethnicity
Los Angeles County, 1996-1998



Location: In 1998, incidence rates increased in 15 of the 23 health districts. However, the concentration of cases in the seven health districts comprising mid- and south/south-central Los Angeles and neighboring cities declined from 76% of cases in 1997 to 66% in 1998.

Reporting: The STD Program uses active and passive surveillance for primary and secondary syphilis. Federal and County policies mandate investigation of all infectious syphilis cases. However, in spite of a longstanding national focus on syphilis, many health care providers and laboratories continue to fail to report. In 1998, approximately 63% of infectious syphilis cases were reported by public providers and laboratories.

PREVENTION

Syphilis prevention efforts in LAC take on many forms. Ensuring adequate treatment of cases, partner follow-up, jail surveillance, investigation of cases in children under 12 years old for possible child abuse, and regular visits by a mobile clinic to homeless shelters and day laborer sites remain central elements of LAC's syphilis control and prevention activities.

COMMENTS

Primary and secondary syphilis cases and rates have declined over 95% since 1987, and have been below US rates since 1991 (Figure 113). This decrease reflects in part the efforts of field staff, who were concentrated in the geographic areas of highest morbidity at the height of the epidemic. Currently, LA County is participating in a national effort aimed at eliminating syphilis as an endemic disease in the United States.

Table 21. Primary and Secondary Syphilis Cases and Rates by Race/Ethnicity, Gender, and Age, Los Angeles County, 1997-1998

	Number of Cases		Rate[a]		Percent Change
	1998	1997	1998	1997	in Rate[b]
Race/Ethnicity					
Asian/Pacific Islander	2	0	0.2	0.0	--
Black	49	56	6.2	7.4	-16
Hispanic	36	32	1.0	0.9	11
White	14	8	0.5	0.3	67
Unknown	11	9	--	--	--
Gender					
Male	67	73	1.5	1.6	-6
Female	45	32	1.0	0.7	43
Unknown	0		--	--	--
Age Group					
0-14	1	0	0.0	0.0	--
15-19	9	7	1.3	1.2	8
20-24	5	7	0.6	1.3	-54
25-29	18	21	1.9	3.0	-37
30-34	29	17	2.9	2.1	38
35+	49	53	1.4	1.3	8
Unknown	1	0	--	--	--
County Total	**112**	**105**	**1.2**	**1.2**	**0**

[a] Cases per 100,000 population. Estimates of race-specific and age-group rates have been adjusted to account for the proportion of cases with missing data by assuming that each sub-category's proportion of the known and unknown cases are equivalent.

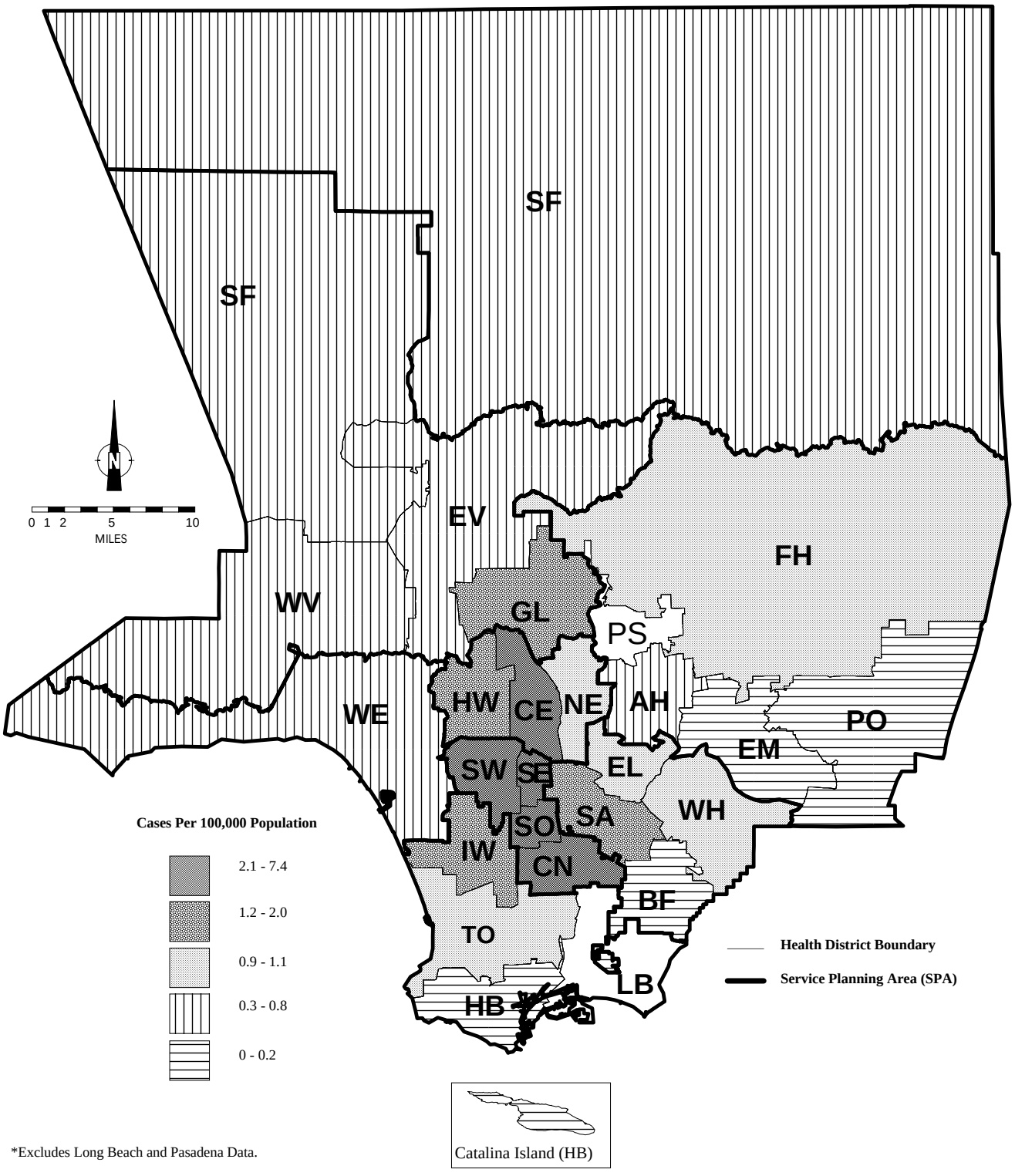
[b] Rates are not comparable between 1997 and 1998 due to age and race/ethnicity changes in the method of population estimation.

Table 22. Primary and Secondary Syphilis Cases and Rates by Health District
Los Angeles County, 1997-1998

	Number of Cases		Rate[a]		Percent Change
	1998	1997	1998	1997	in Rate
Health District					
South[b]	13	22	7.4	13.4	-45
Southwest[b]	18	15	5.0	4.1	22
Central[b]	15	12	5.0	4.0	25
Southeast[b]	4	2	2.5	1.4	79
Compton[b]	6	6	2.1	2.2	-5
Hollywood-Wilshire	10	9	2.0	1.9	5
Inglewood[b]	8	14	2.0	3.5	-43
Glendale	4	2	1.2	0.6	100
San Antonio	5	3	1.2	0.7	71
Northeast	4	0	1.1	0.0	--
Foothill	3	1	1.0	0.3	333
East Los Angeles	2	0	0.9	0.0	--
Torrance	4	0	0.9	0.0	--
Whittier	3	2	0.9	0.6	50
East Valley	3	4	0.7	1.0	-30
West Valley	4	0	0.5	0.0	--
Alhambra	1	0	0.3	0.0	--
San Fernando[c]	2	3	0.3	0.3	0
West	2	4	0.3	0.7	-57
El Monte	1	3	0.2	0.6	-67
Pomona	0	2	0.0	0.4	-100
Bellflower	0	0	0.0	0.0	--
Harbor	0	0	0.0	0.0	--
Unknown District	0	1	--	--	--
TOTAL	**112**	**105**	**1.2**	**1.2**	**0**

[a] Cases per 100,000 population.
[b] Core district.
[c] Includes Antelope Valley.

MAP 16. Syphilis, Primary and Secondary Rates by Health District, Los Angeles County, 1998*



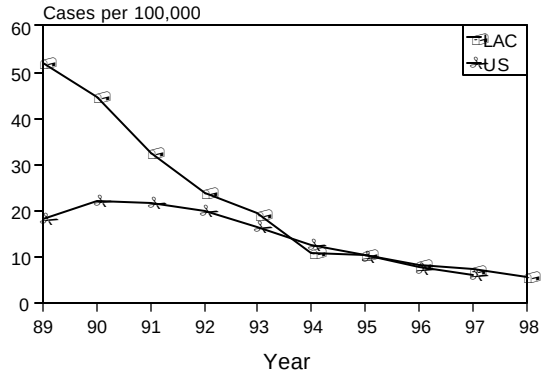
*Excludes Long Beach and Pasadena Data.

SYPHILIS, EARLY LATENT

CRUDE DATA	
Number of Cases	511
Annual Incidence[a]	
LA County	5.6
California	2.3
United States	N/A
Age at Onset	
Mean	34
Median	33
Range	9-80 yrs
Case Fatalities	
LA County	0.0%
United States	N/A

Figure 116

Early Latent Syphilis Rates by Year
LAC and US, 1989 - 1998



[a] Cases per 100,000 population. California rate is provisional.

ETIOLOGY

Treponema pallidum, a sexually transmitted spirochete bacterium.

DISEASE ABSTRACT

Reports of early latent syphilis, i.e., the asymptomatic stage occurring within a year after infection, have declined since 1989 (Figure 116).

STRATIFIED DATA

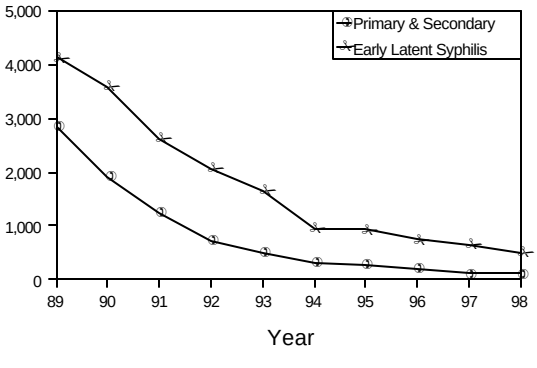
Trends: The decline in early latent syphilis cases parallels that of primary and secondary syphilis, but with a lag of one year due to increased time to detection (Figure 117). In 1989, early latent cases peaked at 4,126 (52.1 cases per 100,000 population); by 1998, the number had fallen to 511 (5.6). The decrease in incidence in LAC since 1989 has been greater than that of the US as a whole.

Seasonality: None.

Age: The age distribution of early latent cases is similar to that of primary and secondary stage infections (Table 23). Overall, the highest incidence remains among 20- to 34-year-olds (Table 23 and Figure 118).

Figure 117

Primary and Secondary Syphilis Cases
Compared to Early Latent Syphilis Cases
Los Angeles County, 1989-1998



Sex: Cases among females are more likely to be detected in the early latent stage than during the primary and secondary stages. Symptoms may not be recognized, and health care may not be readily accessible. Frequently, infections are not diagnosed until screening during prenatal visits or at delivery.

In contrast with primary and secondary syphilis rates, the male-to-female ratio of early latent syphilis rates is only 1.2:1.

Race/Ethnicity: Rates decreased among all race/ethnic groups in 1998. Rates among Blacks remain several times that of Hispanics and 20 times that of Whites (Table 23 and Figure 119).

Location: Fifteen of 23 health districts had lower rates in 1998, including five "core" districts (Table 24). The seven health districts with the most cases reported 67% of the morbidity, down slightly from 1997 (71%; Map 17).

COMMENTS

The CDC defines an early syphilis case as one diagnosed within a year of infection. Given the difficulty of knowing the moment of exposure with an early latent stage infection, and the desire of health care workers to assure adequate treatment when in doubt, it is likely that some reported cases are not correctly classified by stage.

Figure 118

Early Latent Syphilis
Rates by Age Group
Los Angeles County, 1996-1998

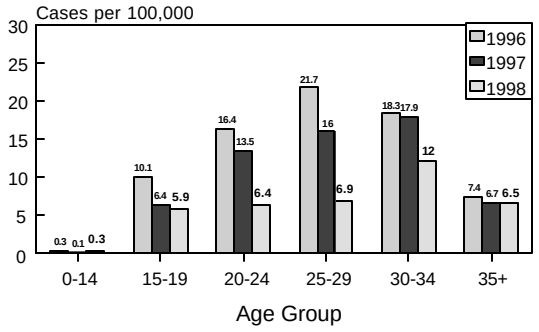


Figure 119

Early Latent Syphilis
Rates by Race/Ethnicity
Los Angeles County, 1996-199

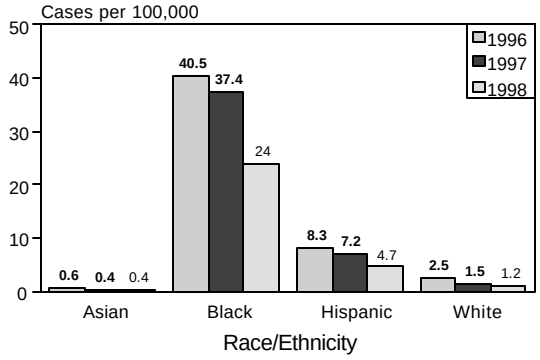


Table 23. Early Latent Syphilis Cases and Rates by Race/Ethnicity, Gender, and Age
Los Angeles County, 1997-1998

	Number of Cases		Rate[a]		Percent Change
	1998	1997	1998	1997	in Rate[b]
Race/Ethnicity					
Asian/Pacific Islander	4	4	0.4	0.4	0
Black	190	258	24.0	37.4	-36
Hispanic	193	243	4.7	7.2	-35
White	37	38	1.2	1.5	-20
Unknown	87	105	--	--	--
Gender					
Male	274	328	6.1	7.3	-16
Female	235	317	5.1	7.0	-27
Unknown	2	3	--	--	--
Age Group					
0-14	2	2	0.3	0.1	200
15-19	40	38	5.9	6.8	-13
20-24	53	76	6.4	13.7	-53
25-29	66	111	6.9	15.7	-56
30-34	121	150	12.0	18.7	-36
35+	227	270	6.5	6.5	0
Unknown	2	1	--	--	--
County Total	**511**	**648**	**5.6**	**7.2**	**-22**

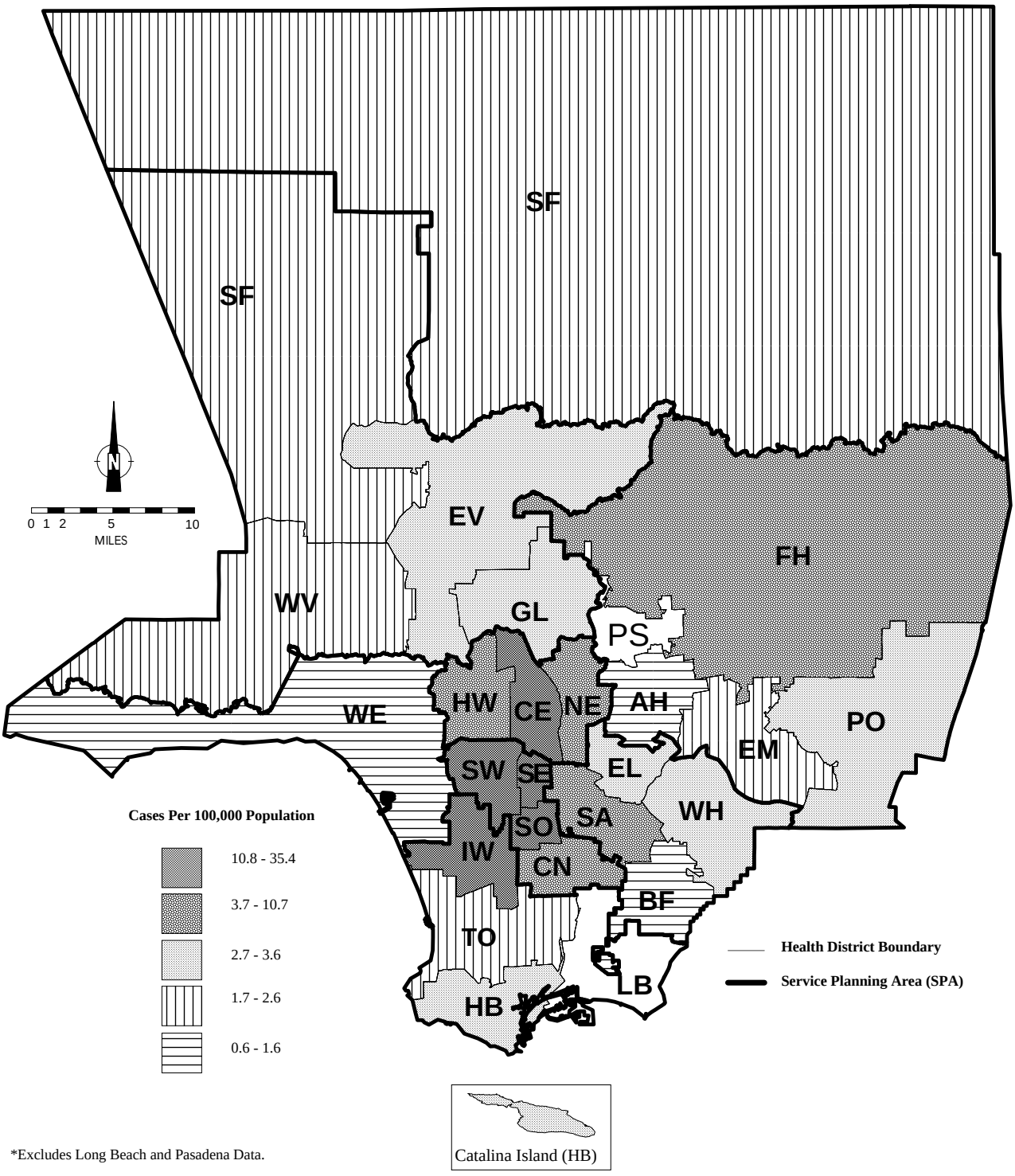
[a] Cases per 100,000 population. Estimates of age- and race-specific rates have been adjusted to account for the proportion of cases with missing data by assuming that each sub-category's proportion of the known and unknown cases are equivalent.
[b] Rates are not comparable between 1997 and 1998 due to age and race/ethnicity changes in the method of population estimation.

Table 24. Early Latent Syphilis Cases and Rates by Health District
Los Angeles County, 1997-1998

	Number of Cases		Rate[a]		Percent Change in Rate
	1998	1997	1998	1997	
Health District					
South[b]	62	84	35.4	48.8	-28
Southeast[b]	17	40	10.8	27.1	-60
Southwest[b]	80	87	22.4	24.2	7
Central[b]	59	68	19.9	22.9	-13
Inglewood[b]	51	81	12.5	20.1	-38
Compton[b]	30	49	10.7	18.4	-42
Hollywood-Wilshire	45	54	9.3	10.9	-15
San Antonio	21	27	4.9	6.6	-35
Foothill	13	15	4.2	4.8	-13
East Los Angeles	6	8	2.7	3.6	-25
Northeast	13	12	3.7	3.5	6
Whittier	10	10	3.1	3.4	-9
Glendale	10	11	3.0	3.2	-6
East Valley	12	11	2.7	2.6	4
San Fernando[c]	12	17	1.7	2.5	-28
El Monte	12	11	2.6	2.3	13
Bellflower	2	8	0.6	2.2	-73
Pomona	16	13	2.9	2.2	32
Harbor	6	4	3.0	2.0	50
West Valley	15	13	1.9	1.7	12
West	6	11	1.0	1.6	-38
Alhambra	3	6	0.8	1.5	-47
Torrance	8	3	1.8	0.7	157
Unknown District	2	5	--	--	--
County Total	**511**	**648**	**5.6**	**7.2**	**-22**

[a] Cases per 100,000 population.
[b] Core district.
[c] Includes Antelope Valley.

MAP 17. Syphilis, Early Latent
Rates by Health District, Los Angeles County, 1998*



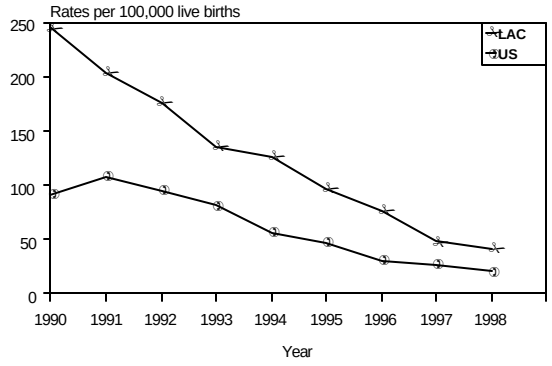
*Excludes Long Beach and Pasadena Data.

SYPHILIS, CONGENITAL

CRUDE DATA	
Number of Cases	61
Prevalence[a]	
LA County	41.8
California[b]	22.2
United States[b]	20.6
Age at Onset	<1 year
Case Fatality	
LA County	1.6%
United States	N/A

Figure 120

Congenital Syphilis Rates by Year
LAC and the US, 1990-1998



[a] Cases per 100,000 live births. LA County rate based on 1998 live birth estimates.
[b] U.S. and California data are provisional.

ETIOLOGY

Treponema pallidum, a spirochete bacterium. Infection is transmitted from mother to fetus *in utero.*

DISEASE ABSTRACT

In 1998, congenital syphilis (CS) prevalence in LAC continued its decade-long decline.

STRATIFIED DATA

Trends: In 1998, the prevalence of congenital syphilis dropped 8%, from 71 cases per 100,000 live births in 1997 to 61 in 1998.

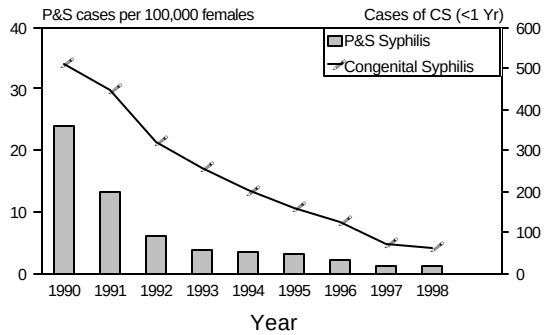
Seasonality: None.

Race: Ninety percent (90%) of congenital syphilis cases were among Blacks and Hispanics, with the highest number of cases occurring among Hispanics. Blacks, however, continued to have a much higher prevalence compared to Hispanics after adjusting for population size. CS prevalence among Blacks remains over six times higher than that of Hispanics and fifteen times that of Whites. The number of cases among Whites and Asian/Pacific Islanders was very low in 1998.

Location: In 1998, the six core health districts reported 57% of all reported cases (Table 26).

Figure 121

Female Primary and Secondary Syphilis Rates
Compared to Congenital Syphilis Cases
Los Angeles County, 1990 -1998

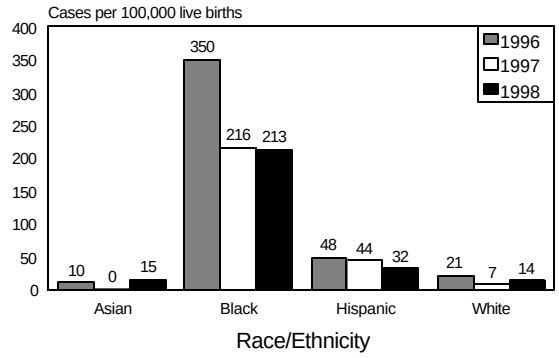


See text on Primary and Secondary Syphilis for discussion of trends

Reporting: The STD Program uses a combination of active and passive surveillance for congenital syphilis. Cases are ascertained from confidential morbidity reports, positive tests from laboratories, and patient, partner, and sibling follow-up. In spite of the efforts of federal, state and county governments to assure proper reporting and the follow-up of all CS cases, non-reporting continues, whether from failure to recognize the disease, the absence of prenatal care, or from noncompliance with reporting laws by physicians and other health care providers.

Figure 122

Congenital Syphilis
Prevalence by Race/Ethnicity
Los Angeles County, 1996-1998



COMMENTS

The decline in congenital syphilis parallels the decrease in all types of syphilis in LAC over the last decade. However, actual and proposed changes in federal and state policies (regarding eligibility for funding due to immigration status and citizenship) that have reduced access to prenatal care among certain sections of the population, have also heightened the risk of a renewed syphilis outbreak and impeded the effectiveness of County STD control and prevention efforts. The ability of women to use publicly funded prenatal care freely offers a critical opportunity to screen, detect, and treat for syphilis and other STDs.

Table 25. Reported Congenital Syphilis Cases and Prevalence at Birth by Race/Ethnicity
Los Angeles County, 1997-1998

	Number of Cases		Prevalence[a]		Percent Change in Prevalence[b]
	1998	1997	1998	1997	
Asian/Pacific Islander	2	0	14.7	0	--
Black	26	25	212.7	215.9	-1%
Hispanic	29	44	31.5	42.3	-34%
White	4	2	14.7	0	52%
Unknown	0	0	--	--	--
County Total	**61**	**71**	**41.8**	**44.9**	**-8%**

[a] Cases per 100,000 live births.
[b] Rates are not comparable between 1997 and 1998 due to age and race/ethnicity changes in the method of population estimation.

Table 26. Congenital Syphilis Cases by Health District
Los Angeles County, 1997-1998

Health District	Number of Cases 1998	1997
Hollywood-Wilshire	8	1
South[a]	8	8
Southwest[a]	7	9
Compton[a]	7	6
Central[a]	5	10
Inglewood[a]	5	9
West Valley	4	2
Southeast[a]	3	8
East Los Angeles	2	0
San Antonio	2	1
San Fernando	1	2
El Monte	1	2
Foothill	1	2
Bellflower	1	0
East Valley	1	3
Northeast	1	3
Pomona	1	0
Torrance	1	0
Whittier	1	0
Alhambra	0	1
Harbor	0	0
West	0	2
Glendale	0	0
Antelope Valley	0	2
Unknown District	1	0
Total	**61**	**71**

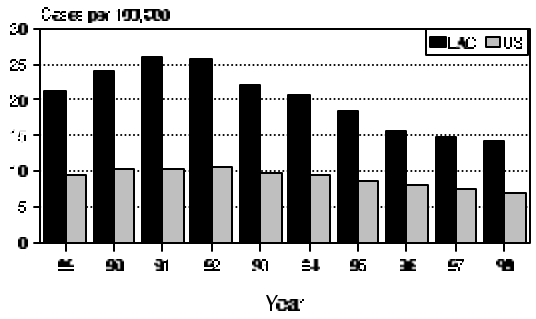
[a] Core Health District

TUBERCULOSIS CONTROL PROGRAM

TUBERCULOSIS

CRUDE DATA	
Number of Cases	1,299
Annual Incidence[a]	
LA County	14.3
California	11.5
United States	6.8
Age at Diagnosis	
Mean	47.0
Median	45.5
Range	<1-94 yrs
Case Fatality	
LA County	N/A
United States[b]	0.5

Figure 123



[a] Cases per 100,000 population.

[b] Provisional data based on the NCHS 80-90% samples of 1995 data.

ETIOLOGY

Tuberculosis is a specific disease caused by the presence of *Mycobacterium tuberculosis* and/or *Mycobacterium bovis* which may affect almost any tissue or organ of the body; the most common site of disease is the lungs.

DISEASE ABSTRACT

The proportion of TB cases in high-risk groups such as those with HIV infection or the homeless continues to gradually decline, although there was a slight increase in the proportion of foreign-born cases.

Reported TB cases have declined for five years since cases peaked in 1992, the year with the most reported cases in LAC in several decades. Demographic data in 1998 resembles that for previous years. *It must be noted,however, that rate calculations for age groups, sex and race/ethnicity are based on new population estimates, and cannot be compared with rates from previous years.*

STRATIFIED DATA

Trends: In 1998, 1,299 TB cases were reported in LAC, with a rate of 14.3 cases per 100,000 population. This represents a 4% decrease in the number of TB cases from 1997 (1,347 cases) and a 4% decrease in the incidence rate (14.9 cases per 100,000 in 1997). In 1998, LAC comprised 34% of all TB cases in California (3,852 cases) and 7% of the TB cases in the United States (18,361 cases)(Table 27). LAC's rate continues to be twice the US rate (Figure 123).

Seasonality: None.

Age: Age-specific rates are shown in Figure 124. The largest proportion of cases in LAC continues to be among 15- to 34-year-olds (27%) (Table 28), followed by the elderly (22%), traditionally the age group with the highest national rate.

Sex: In 1998, 64% (n=831) of TB cases were male (Table 28). Males also had a higher overall rate (18.4 cases per 100,000 population compared to 10.2 in females). The male-to-female rate ratio was 1.8:1 (Table 29).

Race/Ethnicity: The largest proportion of TB cases was among Hispanics (43%), followed by Asians/Others (33%), Blacks (13%), and Whites (10%) (Table 28). Annual race-specific incidence rates were highest among Asians/Others (39.1 cases per 100,000 population) (Figure 125, Table 29).

Anatomical Site: The majority (78%) of the 1,299 cases were diagnosed with pulmonary tuberculosis. Table 30 shows the anatomical site breakdown for 1998.

Foreign-born Cases: A total of 72% of LAC TB cases reported in 1998 were among persons born outside of the US. This is a 2% increase from 1997. Mexico was the most frequently identified country of birth (35% of foreign-born TB cases), followed by the Philippines (16%) and Vietnam and South Korea (8% each).

Homeless Cases: A total of 103 (8%) cases were reported as homeless. Of these, 89% were male. The greatest proportion (47%) of homeless cases were Hispanic, followed by Blacks (31%).

HIV-infected Cases: Of the 1,299 TB cases, 793 (61%) had HIV test results reported. Of the 1,299 TB cases, 115 cases (9%) were identified as co-infected with HIV either through reported HIV test results or matching with the LAC DHS

Figure 124

Tuberculosis
Incidence Rates by Age Group
Los Angeles County, 1998

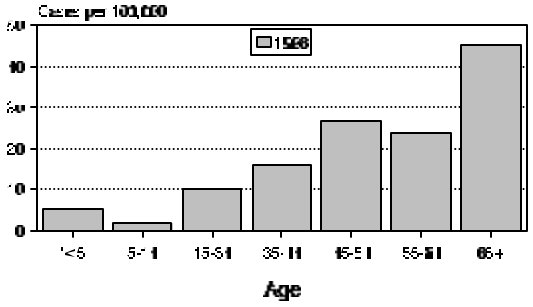


Figure 125

Tuberculosis
Incidence Rates by Race/Ethnicity
Los Angeles County, 1998

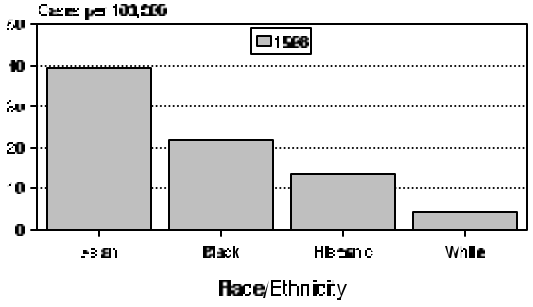
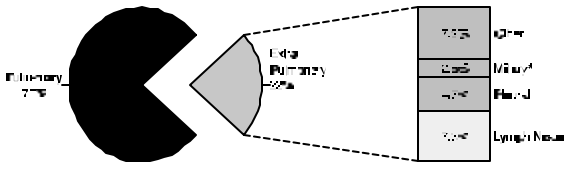


Figure 126

Tuberculosis Incidence by
Major Site of Disease
Los Angeles County, 1998



AIDS registry. Of the 103 homeless TB cases, 84 (82%) had HIV test results reported and 25 (24%) were co-infected with HIV.

Substance Use: Of the 1,299 cases, 250 (19%) were reported as using drugs (injecting and/or non-injecting) and/or excessive alcohol. Of these, 85% (213) were male, 32% (79) were homeless, and 19% (48) were HIV co-infected.

Location: In 1998, Central Health District reported the highest TB rate, with 47.6 cases per 100,000. Central Health District also reported the most TB cases with risk factors such as homelessness, foreign birth, HIV co-infection, injection/non-injection drug use and excessive alcohol use**.**

COMMENTS

Bacteriologic confirmation of disease was obtained in 78% (989) of the 1,269 cases tested. Where bacteriological testing was negative or not done, case confirmation was made on the basis of clinical improvement and/or x-ray changes following therapy with appropriate anti-tuberculosis drugs.

The 4% decrease in TB cases from 1997 to 1998 , while greater than the 2% decrease from 1996 to 1997, is less than the average 11% decrease seen over the four-year period from 1992 through 1996 and the 15% decrease in 1996 from 1995. This could indicate a slowing in the rate of decrease in the numbers of TB cases in LAC.

Table 27. Tuberculosis Cases and Rates,[a] Los Angeles County, California and the United States, 1980-1998

	Los Angeles County		California[1]		United States[2]	
Year	Cases	Rate	Cases	Rate	Cases	Rate
1980	1,438	19.2	4,279	18.1	27,749	12.3
1981	1,816	24.7	4,520	18.7	27,373	11.9
1982	1,422	18.6	3,606	14.5	25,520	11.0
1983	1,428	18.3	3,469	13.8	23,846	10.2
1984	1,293	16.5	3,306	12.9	22,255	9.4
1985	1,495	19.9	3,492	13.2	22,201	9.3
1986	1,362	17.9	3,442	12.7	22,768	9.4
1987	1,302	16.9	3,719	13.4	22,517	9.3
1988	1,190	15.2	3,468	12.2	22,436	9.1
1989	1,681	21.2	4,212	14.5	23,495	9.5
1990	1,936	24.1	4,889	16.3	25,701	10.3
1991	2,121	26.0	5,273	17.3	26,283	10.4
1992	2,198	25.6	5,382	17.3	26,673	10.5
1993	1,940	22.1	5,173	16.4	25,287	9.8
1994	1,794	20.7	4,860	15.3	24,361	9.4
1995	1,622	18.5	4,677	14.6	22,860	8.7
1996	1,375	15.5	4,313	13.3	21,337	8.0
1997	1,347	14.9	4,059	12.3	19,855	7.4
1998	1,299	14.3	3,852	11.5	18,361	6.8

[a] Cases per 100,000 population.

[1] State of California Department of Health Services. Report on Tuerculosis in California, 1998

[2] Division of TB Elimination, CDC. Tuberculosis and case rates per 100,000 Population: States, 1998 and 1997

Table 28. Annual Tuberculosis Cases, by Sex, Age, and Race/Ethnicity
Los Angeles County, 1989-1998

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Sex										
Male	1,094	1,224	1,351	1,420	1,260	1,143	1,049	905	858	831
Female	587	712	770	778	680	651	572	470	489	468
Age										
<5	78	97	123	118	92	75	80	51	50	40
5-14	53	74	78	79	74	57	34	42	37	25
15-34	574	635	724	748	615	540	451	343	361	345
35-44	299	371	419	418	359	357	300	270	253	227
45-54	193	220	257	281	266	258	250	208	192	229
55-64	184	222	206	228	225	193	195	154	158	144
65 +	300	316	314	326	309	314	312	307	296	289
Unknown	0	1	0	0	0	0	0	0	0	0
Race										
White	239	227	237	266	220	184	195	148	132	132
Black	267	325	385	383	374	333	272	227	187	172
Hispanic	712	859	1,004	991	906	786	701	619	597	560
Asian/Other	460	523	494	555	439	488	453	380	431	435
Unknown	3	2	1	3	1	3	1	1	0	0
Total	**1,681**	**1,936**	**2,121**	**2,198**	**1,940**	**1,794**	**1,622**	**1,375**	**1,347**	**1,299**

Table 29. Annual Tuberculosis Incidence Rates,[a] by Sex, Age and Race/Ethnicity[b] Los Angeles County, 1989-1998

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998*
Sex										
Male	28.3	31.2	33.9	33.0	28.6	26.4	24.0	20.4	19.0	18.4
Female	14.5	17.4	18.5	18.1	15.5	15.0	13.0	10.6	10.8	10.2
Age										
<5	12.2	15.1	18.9	14.6	10.7	8.5	9.9	5.8	6.3	5.3
5-14	4.7	6.5	6.8	6.5	6.0	4.7	2.7	2.9	2.5	1.9
15-34	21.2	23.3	26.4	25.2	20.6	19.1	16.5	13.1	13.7	9.9
35-44	26.3	31.9	35.4	31.6	26.2	25.3	19.9	19.1	16.6	16.0
45-54	24.5	27.3	31.1	32.6	29.6	28.2	26.5	21.2	18.1	26.5
55-64	26.6	32.0	29.3	37.6	37.1	32.1	32.0	24.6	24.1	23.6
65+	36.1	37.1	36.2	39.4	37.0	39.1	34.8	33.3	31.9	45.4
Race										
White	7.1	6.8	7.2	8.0	6.7	6.3	6.3	4.9	4.4	4.4
Black	29.4	35.7	42.1	41.7	40.3	40.0	30.9	27.2	22.7	21.7
Hispanic	26.5	31.0	35.2	29.8	26.1	20.4	18.9	15.9	14.8	13.5
Asian/Other	48.0	52.0	46.7	53.3	40.0	47.2	43.5	34.0	36.0	39.1
Incidence	**21.2**	**24.1**	**26.0**	**26.0**	**22.1**	**20.7**	**18.5**	**15.5**	**14.9**	**14.3**

[a] Cases per 100,000 population.

[b] Rates for 1990 and 1991 were calculated using population estimations based on the 1980 Census; 1992-1997 rates were calculated using population estimation based on 1990 census.

* Rates for 1998 were calculated using different population denominator estimates. Comparisons between years may not be valid.

Table 30. Tuberculosis Incidence by Major Site of Disease, Los Angeles County, 1998

Disease Site	Number of Cases	Percent
Pulmonary	1,008	77.6
Lymph Node	95	7.3
Pleural	61	4.7
Miliary/Disseminated	36	2.8
Meningeal	15	1.2
Peritoneal	18	1.4
Bone/Joint	30	2.3
Genitourinary	21	1.6
Other	15	1.2
Total	**1,299**	**100.1***

* Value >100% due to rounding.

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1. Asch S, Leake B, Knowles L, Gelberg L. Tuberculosis in homeless patients: potential for case finding in public emergency departments. *Ann Emerg Med* 1998;32:144-147.

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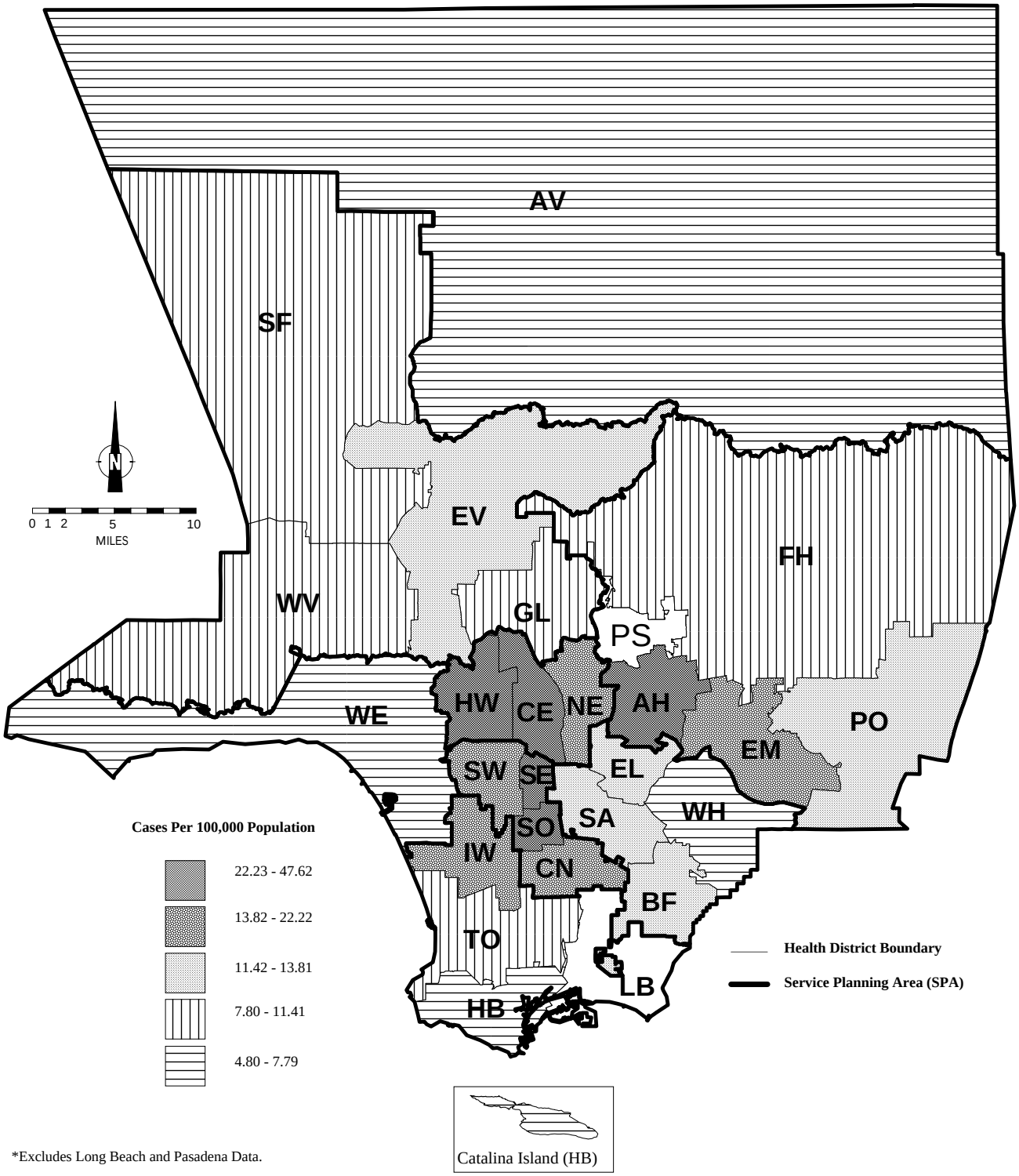
MAP 18. Tuberculosis
Rates by Health District, Los Angeles County, 1998*



*Excludes Long Beach and Pasadena Data.

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