PURPOSE OF THE LOS ANGELES COUNTY
ANNUAL MORBIDITY AND SPECIAL STUDIES REPORTS

The Acute Communicable Disease Control **Annual Morbidity Report** of Los Angeles County's Department of Health Services, Public Health is compiled to:

1. Summarize annual morbidity from acute communicable diseases in Los Angeles County;
2. assess the effectiveness of established communicable disease control programs;
3. identify patterns of disease as an aid in directing future disease prevention efforts;
4. identify limitations of the data used for the above purposes and to identify means of improving that data; and
5. serve as a resource for medical and public health authorities at county, state, and national levels.

Note: The 2000 ACDC Annual Morbidity Report does **not** include reports on the following diseases: Tuberculosis, Sexually Transmitted Diseases, or Adult HIV.

LOS ANGELES COUNTY DEMOGRAPHIC DATA

Population figures from the Census 2000 were unavailable at the time of printing; therefore, figures used for calculating the 2000 disease rates in this report were derived from 2000 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 2000 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 are separate reporting jurisdictions recognized by California Department of Health Services and 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 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 2000 Reports of Notifiable Diseases, *Morbidity and Mortality Weekly Report* 2001/50(33);712. The *MMWR* report also includes Bureau of the Census 2000 population estimates for the United States 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 2000 was 272,692,000, and that of California was 33,145,000.

Population estimates for Los Angeles County (not including Pasadena and Long Beach) used in this report are listed in Table A for 2000 as well as for the previous five years. Population data also are given by age, sex, race and health district for 2000 (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, 1995-2000

Year	Population
1995	8,753,853
1996	8,880,054
1997	9,051,337
1998	9,097,041
1999	9,171,507
2000	9,246,541

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

Table B. Los Angeles County[a] Population by Age Group, 2000

Age Group in Years	Population
<1	183,067
1-4	560,559
5-14	1,391,035
15-34	2,794,767
35-44	1,504,814
45-54	1,086,039
55-64	725,950
65+	1,000,310
Total	**9,246,541**

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

Table C. Los Angeles County[a] Population by Sex, 2000

Sex	Population
Male	4,611,378
Female	4,635,163
Total	**9,246,541**

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

Table D. Los Angeles County[a] Population by Race, 2000

Race	Population
Asian	1,120,688
Black	766,724
Hispanic	4,310,940
White	2,986,960
Other[b]	61,229
Total	**9,246,541**

[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, 2000

Health District	Population
Alhambra	369,272
Antelope Valley	328,537
Bellflower	361,911
Central	380,232
Compton	284,839
East Los Angeles	245,123
East Valley	412,852
El Monte	470,258
Foothill	306,454
Glendale	340,507
Harbor	214,709
Hollywood-Wilshire	513,248
Inglewood	410,891
Northeast	410,046
Pomona	546,322
San Antonio	444,476
San Fernando	378,206
South	176,256
Southeast	187,597
Southwest	367,360
Torrance	451,385
West	579,490
West Valley	733,182
Whittier	333,388
Total	**9,246,541**

[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 sometimes active surveillance.

1. 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, electronically, by telephone, or by facsimile.
2. Active surveillance entails ACDC staff regularly contacting hospitals, laboratories and physicians in an effort to identify all cases of a given disease. In 2000, ACDC did active surveillance for pediatric cases of acquired immunodeficiency syndrome. In addition, ACDC staff contacted schools, hospitals, nursing homes, student health centers and sentinel physicians to collect reports of vaccine-preventable diseases and to investigate outbreaks.

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 for some diseases as many as 98% of cases are not reported.

2. Reliability of Rates

All vital statistics rates, including morbidity rates, are subject to random variation. This variation is inversely related to the number of events (observations, cases) used to calculate the rate. The smaller the frequency of occurrence of an event, the relatively less stable its occurrence from observation to observation.

As a consequence, diseases with only a few cases reported per year can have highly unstable rates. The observation and enumeration of these “rare events” is beset with uncertainty. The observation of zero events is especially hazardous.

To account for these instabilities, all rates in the ACDC Annual Morbidity Report based on less than 19 events are considered “unreliable.” This translates into a relative standard error of the rate of 23%, which is the cut-off for rate reliability used by the National Center for Health Statistics. Also, rates of zero, based on no events, will not be reported as such, because their standard errors and reliability cannot be determined. Therefore, unreliable rates should be interpreted with caution.

In the Annual Morbidity Report, rates of disease for groups (e.g., Hispanic versus non-Hispanic) are said to differ significantly only when two criteria are met: (1) group rates are reliable and (2) the 95% confidence limits for these rates do not overlap. Confidence limits are calculated only those rates which are reliable.

3. Case-fatality percent

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 percent is based on deaths that occurred in 2000 regardless of year of disease onset; therefore, fatality data should be interpreted with caution.

4. 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.

5. Onset Date versus Report Date

Some cases of disease occurring in 2000 were not reported until after this annual report was completed. Slight differences in the number of cases and rates of disease for 2000 may be observed in subsequent annual reports. Any such disparities are likely to be small.

6. Population estimates

Estimates of the LAC population are subject to many errors. Population data for 1991 through 2000 were derived from the 1990 census using a sophisticated estimation model developed in 1999. These independent population estimates facilitate trend analysis. Also, the 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. At time of printing, the 2000 census population breakdown for LAC was unavailable.

7. 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. Therefore, some disease rates more accurately reflect the place of diagnosis than the location where an infection was acquired.

8. Health Districts and Service Planning Areas

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. In 1999, the 24 individual health districts were grouped into eight Service Planning Areas (SPA): SPA 1, Antelope Valley; SPA 2, San Fernando Valley; SPA 3, San Gabriel; SPA 4, Metro; SPA 5, West; SPA 6, South; SPA 7, East; and SPA 8, South Bay.

9. Race/Ethnicity category changes

The five major racial/ethnic categories and their definitions as used in this report are as follows:

- **a. Asian–** Person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
- **b. American Indian–** Person having origins in any of the original peoples of North America and who maintain cultural identification through tribal affiliation or community recognition.
- **c. Black–** Person having origins in any of the black racial groups of Africa.
- **d. Hispanic–** Person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- **e. White–** Person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

STANDARD REPORT FORMAT

1. CRUDE DATA

- **Number of Cases:** For most diseases, this number reflects new cases of the disease with an onset in 2000. 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 2000.

- **Annual Incidence Rates in Los Angeles County:** Number of new cases in 2000 divided by 2000 county population estimate multiplied by 100,000.

- **Annual Incidence Rates in the US and California:** 2000 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 2000. For cases under one year of age, less than one (<1) was used.

- **Case Fatality:** Number of deaths in 2000 due to disease (when data were available) divided by the number of new cases of the disease in 2000, expressed as a percentage. Note that deaths may be due to infections acquired prior to 2000.

2. ETIOLOGY: includes the causative agent, mode of spread, common symptoms, potential severe outcomes, susceptible groups, and vaccine-preventability.

3. DISEASE ABSTRACT: A synopsis or the highlights of disease activity in 2000.

4. **STRATIFIED DATA**

- **Trends:** Any trends in case characteristics during recent years.
- **Seasonality:** Number of cases that occurred during each month of 2000.
- **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 or SPA 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.

5. **PREVENTION:** A description of county programs and other measures that address the disease.

6. **COMMENTS:** Miscellaneous information not fitting easily into above categories, as well as elaboration of some findings of interest.

7. **ADDITIONAL RESOURCES:** includes agencies, phone numbers, websites, and other resources on the subject.