OVERVIEW

ACUTE COMMUNICABLE DISEASE CONTROL
ANNUAL MORBIDITY REPORT
2005

PURPOSE

The Acute Communicable Disease Control (ACDC) Annual Morbidity Report of the Los Angeles County Department of Public Health (DPH) is compiled to:

1. summarize annual morbidity from several acute communicable diseases occurring in Los Angeles County (LAC);
2. assess the effectiveness of established communicable disease control programs;
3. identify patterns of disease as a means of 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 2005 ACDC Annual Morbidity Report does not include information on tuberculosis, sexually transmitted diseases, or HIV and AIDS. Information regarding these diseases is available from their respective departments (see the LAC Public Health website for more information at www.lapublichealth.org.)

LAC DEMOGRAPHIC DATA

LAC population estimates used for this report are created by the Population Estimates and Projections System (PEPS) provided to the LAC DHS, Public Health by Urban Research. The LAC population is based on both estimates and projections that are adjusted when real relevant numbers become available (e.g., DMV records, Voters' registry, school enrollment and immigration records etc.).

National and California state counts of reportable diseases were obtained from the Centers for Disease Control and Prevention (CDC) Final 2005 Reports of Notifiable Diseases.[1] This report also includes US Census population estimates—these were used to calculate national and California rates of disease. According to that report, the population of the US in 2005 was 293,655,000 and the population of California was 35,894,000.

Long Beach and Pasadena are separate reporting jurisdictions, as recognized by the California Department of Health Services, and as such these two cities maintain their own disease reporting systems. Therefore, disease episodes occurring among residents of Long Beach and Pasadena have been excluded from LAC morbidity data, and their populations subtracted from LAC population data. Exceptions to this rule are noted in the text when they occur.

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1. CDC. Notice to Readers: Final 2005 reports of notifiable diseases. MMWR 2006; 55(32):880–81. Available at: www.cdc.gov/mmwr/preview/mmwrhtml/mm5532a4.htm

Table A. Los Angles County* population by year, 2000–2005

Year	Population	% change
2000	8,968,327	
2001	9,122,861	1.7%
2002	9,253,109	1.4%
2003	9,398,128	1.6%
2004	9,535,937	1.5%
2005	9,582,956	0.5%

* Does not include cities of Pasadena and Long Beach.

Table B. Los Angles County* population by age group, 2005

Age (in years)	Population	%
<1	143,353	1.5%
1–4	577,106	6.0%
5–14	1,476,492	15.4%
15–34	2,786,260	29.1%
35–44	1,512,205	15.8%
45–54	1,274,350	13.3%
55–64	840,938	8.8%
65+	972,252	10.1%
Total	**9,582,956**	**100.0%**

* Does not include cities of Pasadena and Long Beach.

Table C. Los Angles County* population by sex, 2005

Sex	Population	%
Male	4,741,895	49.5%
Female	4,841,061	50.5%
Total	**9,582,956**	**100.0%**

* Does not include cities of Pasadena and Long Beach.

Table D. Los Angles County* population by race, 2005

Race	Population	%
Asian	1,252,593	13.1%
Black	864,580	9.0%
Latino	4,548,070	47.5%
White	2,889,342	30.1%
Other**	28,371	0.3%
Total	**9,582,956**	**100.0%**

* Does not include cities of Pasadena and Long Beach.
** Includes American Indian, Alaskan Native, Eskimo and Aleut.

Table E. Los Angles County*
population by health district and SPA, 2005

Health District	Population
SPA1	**342,804**
Antelope valley	342,804
SPA 2	**2,132,132**
East Valley	446,001
Glendale	353,472
San Fernando	477,255
West Valley	855,404
SPA 3	**1,701,396**
Alhambra	356,399
El Monte	464,104
Foothill	310,911
Pomona	569,982
SPA 4	**1,243,053**
Central	372,714
Hollywood Wilshire	537,152
Northeast	333,187
SPA 5	**649,712**
West	649,712
SPA 6	**1,036,466**
Compton	288,188
South	180,968
Southeast	169,204
Southwest	398,106
SPA 7	**1,372,034**
Bellflower	370,229
East Los Angeles	227,406
San Antonio	448,183
Whittier	326,216
SPA 8	**1,105,359**
Inglewood	429,740
Harbor	208,262
Torrance	467,357
Total	**9,582,956**

* Pasadena and Long Beach are separate health jurisdictions and
  as such are excluded from this table.

DATA SOURCES

Data on occurrence of communicable diseases in LAC were obtained through passive and sometimes active surveillance. Every health-care provider or administrator of a health facility or clinic, and anyone in charge of a public or private school, kindergarten, boarding school, or preschool knowing of a **case or suspected case** of a communicable disease is required to report it to the local health department as specified by the California Code of Regulations (Section 2500). Immediate reporting by telephone is also required for any **outbreak** or **unusual incidence** of infectious disease and any **unusual disease** not listed in Section 2500. Laboratories have separate requirements for reporting certain communicable diseases (Section 2505). Health-care providers must also give detailed instructions to household members in regard to precautionary measures to be taken for preventing the spread of disease (Section 2514).

1. Passive surveillance relies on physicians, laboratories, and other health-care providers to report diseases of their own accord to the 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.

DATA LIMITATIONS

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

1. Underreporting.
    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 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% or more, which is the cut-off for rate reliability used by the National Center for Health Statistics. Therefore, rates based on less than 19 events will not be reported because their standard errors and reliability cannot be determined. Readers may calculate the rates on their own using standard population tables.
    In the Annual Morbidity Report, rates of disease for groups (e.g., Latino versus non-Latino) 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 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 percent is based on deaths that occurred during the year regardless of year of disease onset; therefore, fatality data should be interpreted with caution.

4. Case Definitions.
To standardize surveillance, CDC case definition for infectious diseases under public surveillance2 is used with some exceptions as noted in the text of the individual diseases. 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 during the year were not reported until after this annual report was completed. Slight differences in the number of cases and rates of disease for the year 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. Furthermore, 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.

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 in Latino 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 Categories.
- **Asian** – person having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands.
- **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.
- **Black** – person having origins in any of the black racial groups of Africa.
- **Latino** – person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
- **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 2005. If the onset was unknown, the date of diagnosis was used.
- **Annual Incidence Rates in LAC**: Number of new cases in 2005 divided by LAC census population (minus Long Beach and Pasadena) multiplied by 100,000.
- **Annual Incidence Rates in the US and California**: 2005 incidence rates for the US and California were taken from the previously cited CDC publication, Morbidity and Mortality Weekly Report (MMWR). 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.

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2 CDC. Case Definitions for Infectious Conditions under Public Health Surveillance," MMWR 1997;46(RR-10):1-57. Available at: www.cdc.gov/mmwr/preview/mmwrhtml/00047449.htm

- **Range of Ages at Onset**: Ages of the youngest and oldest cases in 2005. For cases under one year of age, less than one (<1) was used.
- **Case Fatality**: Number of deaths in 2005 due to disease (when data were available) divided by the number of new cases of the disease in 2005, expressed as a percentage. Note that deaths may be due to infections acquired prior to 2005.

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

3. Disease Abstract.
    This provides a synopsis or the highlights of disease activity in 2005.

4. Stratified Data.
    - **Trends**: Any trends in case characteristics during recent years.
    - **Seasonality**: Number of cases that occurred during each month of 2005.
    - **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.
    If applicable, includes a description of county programs and other measures that address the disease.

6. Comments.
    Describes miscellaneous information not fitting easily into above categories, as well as elaboration of some findings of interest.

7. Additional Resources.
    Provides agencies, phone numbers, websites, and other resources on the subject.

TABLE F. LIST OF ACRONYMS

The following abbreviations and acronyms may be found throughout this report.

95%CI	95 percent confidence interval	**HD**	Health District
ACDC	Acute Communicable Disease Control	**Hib**	*Haemophilus influenzae*, type b
AIDS	Acquired immunodeficiency syndrome	**HIV**	Human immunodeficiency virus
AR	Attack rate	**IgG**	Immunoglobulin G
CDC	Centers for Disease Control and Prevention	**IgM**	Immunoglobulin M
CDHS	California Dept. of Health Services	**LAC**	Los Angeles County
CMR	Confidential morbidity report	**MMR**	Mumps-Measles-Rubella vaccine
CSF	Cerebral spinal fluid	**MMWR**	Morbidity & Mortality Weekly Report
DHS	Department of Health Services	**N/A**	Not available
DTaP	Diphtheria-tetanus-acellular pertussis	**OR**	Odds ratio
DTP	Diphtheria-tetanus-pertussis vaccine	**PCP**	*Pneumocystis carinii pneumonia*
EHS	Environmental Health Services	**PHBPP**	Perinatal Hepatitis B Prevention Prgm.
GI	gastrointestinal	**RR**	Rate ratio or relative risk
GE	gastroenteritis	**SNF**	Skilled nursing facility
HAV	Hepatitis A virus	**sp. or spp.**	Species
HBIG	Hepatitis B Immunoglobulin	**SPA**	Service Planning Area
HBsAg	Hepatitis B surface antigen	**US**	United States
HBV	Hepatitis B virus	**VCMR**	Visual confidential morbidity report (software)
HCV	Hepatitis C virus		

<u>LOS ANGELES COUNTY HEALTH DISTRICTS</u>:

AH	Alhambra	**FH**	Foothill	**SE**	Southeast
AV	Antelope Valley	**GL**	Glendale	**SF**	San Fernando
BF	Bellflower	**HB**	Harbor	**SO**	South
CE	Central	**HW**	Hollywood/Wilshire	**SW**	Southwest
CN	Compton	**IW**	Inglewood	**TO**	Torrance
EL	East Los Angeles	**NE**	Northeast	**WE**	West
EV	East Valley	**PO**	Pomona	**WV**	West Valley
EM	El Monte	**SA**	San Antonio	**WH**	Whittier