

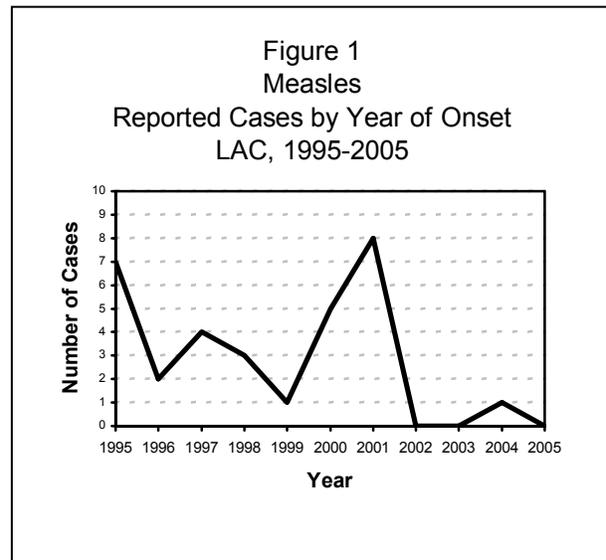


## MEASLES

| CRUDE DATA                    |      |
|-------------------------------|------|
| Number of Cases               | 0    |
| Annual Incidence <sup>a</sup> |      |
| LA County                     | 0    |
| California                    | 0.01 |
| United States                 |      |
| Case Fatality                 |      |
| LA County                     | 0.0% |
| United States                 |      |

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

<sup>b</sup> Rates based on less than 20 observations are unreliable.



### DESCRIPTION

Measles is a vaccine-preventable disease caused by a paramyxovirus and is transmitted by contact with respiratory droplets or by airborne spread. Common signs and symptoms of measles include fever, cough, conjunctivitis, runny nose, photophobia, Koplik spots, and a generalized maculopapular rash. Severe complications are rare, but can include acute encephalitis and death from respiratory or neurologic complications. Immunocompromised individuals are more likely to develop complications. All persons who have not had the disease or who have not been successfully immunized are susceptible. The minimum clinical criteria for measles are fever of at least 101°F, a generalized rash lasting at least three days, and either cough, coryza, conjunctivitis, or photophobia. A case is confirmed by a positive IgM titer or a four-fold increase in acute and convalescent IgG titers.

### DISEASE ABSTRACT

- From 36 measles suspect reports received at the LAC Immunization Program, there were no confirmed measles cases identified in LAC during 2005, marking only the third time this has occurred in over 40 years.
- During 2005, 4 measles cases were reported in California. Since all recent measles cases have been imported, an effective measles surveillance system needs to be maintained.

### IMMUNIZATION RECOMMENDATIONS

- Measles disease can be effectively prevented by Measles-Mumps-Rubella (MMR) vaccine, given in accordance with recommendations from the CDC's Advisory Committee on Immunization Practices (ACIP).
- Usually, two doses of measles-containing vaccine are given via MMR vaccine. The first dose is recommended at 12 months of age. The second dose can be given as early as four weeks after the first dose, but is usually given at ages 4 to 6 years.
- Vaccination is recommended for those born in 1957 or later who have no prior MMR vaccination or history of disease. Proof of immunization with two MMR doses is recommended for health care workers and persons attending post secondary educational institutions as well as others who work or live in high risk settings.
- Over 95% of those who receive the current live attenuated measles vaccine develop immunity.
- Although the titer of vaccine-induced antibodies is lower than that following natural disease, both



serologic and epidemiologic evidence indicate that vaccine-induced immunity appears to be long-term and probably life-long in most individuals.

- Women should not become pregnant within 4 weeks of vaccination.
- Individuals who are severely immunocompromised for any reason should not be given MMR vaccine.

## STRATIFIED DATA

**Trends:** Over the past 10 years, the number of confirmed measles cases has decreased significantly (Figure 1). Although absolute numbers are low, the number of reported measles cases started increasing in 1999. In 2002, 2003, and 2005, no confirmed cases of measles were identified in LAC, marking only three times this has occurred in more than 40 years. The single case in 2004 was an imported case, whose rash onset occurred within 21 days of traveling outside of the United States.

## COMMENTS

While there were no confirmed measles cases in LAC in 2005, measles continues to circulate in other parts of the world. Susceptible individuals who reside in the United States will be at risk and imported cases will continue to be identified. For example, in 2005, the state of Indiana experienced an import-associated measles outbreak involving 34 cases. In a separate situation, LAC was alerted about possible measles contacts/cases among a group of 311 resettling Kenyan refugees who were emigrating from an area where measles incidence was high. Because LAC is in many ways a “door-way” to the US for travelers and other persons coming from parts of the world where measles continues to circulate, it is important that an effective measles surveillance system be maintained in this local health jurisdiction. With the high measles vaccine coverage levels (exceeds 90% for children 19-35 months of age), indigenous measles cases are expected to be almost non-existent. The importation of measles, however, has resulted in sporadic measles activity in LAC, as was noted in 2004 and in 2001, when at least 3 of the 8 cases that year were proven to have a foreign travel or foreign born connection.

The strength of LAC’s measles surveillance system is exemplified by the fact that 36 suspect measles cases were reported in 2005. For surveillance to be effective, suspected cases must be reported to the health department. In 2005, suspect measles reports came from a variety of sources. Approximately 42% (n=15) of the suspect cases were first reported by laboratories, 33% (n=12) were reported by hospitals/clinics, 17% (n=6) were reported by school nurses, and the remaining 8% (n=3) were reported by other sources, including the state health department, other counties, and via death certificate review. Among the 36 suspect cases, 47% (n=17) had febrile-rash illnesses that were ruled out because they did not meet the minimum clinical criteria for measles. Twenty-three of the 36 suspect cases (64%) had laboratory studies performed. For 8 of the 23 cases, testing was conducted due to clinical suspicion of measles; results were negative, ruling out measles as the cause of illness. The remaining 15 patients tested were reported to the health department by laboratories due to positive lab results. Further investigation revealed that the individuals were asymptomatic and that measles antibody tests were performed to test for immunity as part of a routine physical examination, school entrance requirement, or employee health requirement.

It is the policy of the LAC Immunization Program to immediately investigate all suspect measles cases that are reported in order to verify diagnosis, medical history information, immunization status, and past travel history. Physicians and suspect cases are contacted directly by phone to verify the diagnosis and determine if the minimum clinical criteria for measles classification have been met. If a measles report involves a school or a sensitive setting like a health care facility, a school nurse or a medical administrator is contacted to assist in investigative efforts and to immediately implement isolation procedures necessary for preventing the spread of the disease. Susceptible contacts are identified and offered MMR vaccination to prevent natural measles occurrence. If vaccine is contraindicated, immune globulin (IG) may be given instead. IG is recommended for infants less than 6-months of age, pregnant women, and immunocompromised individuals.

Both clinical examination and laboratory tests are important in the diagnostic confirmation of the disease. Blood specimen collections are arranged for serological analysis by public health nurses if physicians



have not ordered them. The testing laboratory is contacted to obtain measles IgM and IgG antibody levels. Detection of both types of antibodies is important in disease testing. Measles IgM antibodies are detectable from 2-28 days after rash onset. The presence of IgG antibodies in the serum indicates prior exposure to measles, either by natural means or by immunization. In the absence of an IgM test, a four-fold rise in measles IgG antibody titers between an acute serum specimen and a convalescent specimen at 2 weeks later usually indicates current or recent measles infection.

In summary, the decline in the number of measles cases in LAC is attributable to the effectiveness of the MMR vaccine, diligent surveillance activities, and the success of the various outreach and educational programs implemented by the LAC Immunization Program and others to improve vaccination coverage rates in the county.

### **ADDITIONAL RESOURCES**

Additional information about measles is available at:

- National Immunization Program – [www.cdc.gov/nip](http://www.cdc.gov/nip)
- Immunization Action Coalition – [www.immunize.org](http://www.immunize.org)
- LAC, Immunization Program – [www.lapublichealth.org/ip](http://www.lapublichealth.org/ip)