

## **A Tale of Two Cities (Measles Outbreak)**

It was the best of times, it was the worst of times . . . It was the best of times for San Diego, California in 2008. They hadn't had an outbreak of measles since 1991. But it was the worst of times for Lucerne, Switzerland and many other cities in Switzerland that had been experiencing their largest measles outbreak since 2006; about 1500 cases in a little over one year.

An unvaccinated 7 year old resident of San Diego traveled with his family to Switzerland and returned home on January 13, 2008. On January 25, he was taken to his pediatrician because he had a rash; scarlet fever was ruled out, but the cause of the rash remained a mystery. The following day his condition worsened and his doctor sent him for measles antibody testing. Later that day he returned to the hospital emergency department with a fever of 104 °F and a generalized rash. He was confirmed to have measles.

In the following weeks the San Diego County Health Department confirmed 11 additional measles cases in unvaccinated infants and children. These cases included both of the boy's siblings, five classmates, and four children who had visited the pediatrician's office the same day as the boy. Three of these cases were infants under 12 months of age and too young to be immunized. One of the infants was hospitalized for 3 days with dehydration and a fever of 106 °F. He dropped from 18 pounds to 12 pounds in five days and took months to recover. Seventy other children had to be quarantined in their homes for 21 days.

Measles is a highly infectious virus that typically begins with mild to moderate fever, runny nose, red eyes, and sore throat. Two to three days after symptoms begin, tiny white spots (Koplik's spots) may appear inside the mouth. A few days later a red rash appears. The rash usually begins on a person's face at the hairline and spreads downward to the neck, trunk, arms, legs, and feet. When the rash appears a person's fever may spike to more than 104 °F. After a few days, the fever and rash resolve.

Before the measles vaccine, 3 to 4 million cases occurred annually in the United States, resulting in about 450 deaths and 1000 children with permanent brain damage. We now have fewer than 100 measles cases yearly. In fact it's so rare that many doctors have never seen a case of measles and thus do not recognize it when a child presents in their office with the typical rash. Virtually all of the measles cases in the United States are imported from people visiting places such as Japan, India, and Europe. If administered at  $\geq 12$  months of age, two doses of measles-containing vaccine or MMR are 99% effective in preventing measles disease.

The moral of the story: Get your children vaccinated against MMR, especially before travel, to prevent measles in your own child (as well as mumps and rubella) and to protect all the children in the community through herd immunity.

*This information is provided by the Marin County Immunization Coalition.*

References: <http://www.cdc.gov/Features/Measles/>  
<http://www.eurosurveillance.org>