

Measles outbreak in a fully immunized secondary-school population

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Abstract

An outbreak of measles occurred among adolescents in Corpus Christi, Texas, in the spring of 1985, even though vaccination requirements for school attendance had been thoroughly enforced. Serum samples from 1806 students at two secondary schools were obtained eight days after the onset of the first case. Only 4.1 percent of these students (74 of 1806) lacked detectable antibody to measles according to enzyme-linked immunosorbent assay, and more than 99 percent had records of vaccination with live measles vaccine. Stratified analysis showed that the number of doses of vaccine received was the most important predictor of antibody response. Ninety-five percent confidence intervals of seronegative rates were 0 to 3.3 percent for students who had received two prior doses of vaccine, as compared with 3.6 to 6.8 percent for students who had received only a single dose. After the survey, none of the 1732 seropositive students contracted measles. Fourteen of 74 seronegative students, all of whom had been vaccinated, contracted measles. In addition, three seronegative students seroconverted without experiencing any symptoms. We conclude that outbreaks of measles can occur in secondary schools, even when more than 99 percent of the students have been vaccinated and more than 95 percent are immune.