

# Mumps Outbreak Shows Vaccine Highly Effective

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**M**umps outbreaks can occur even among highly vaccinated populations, according to a new report on an outbreak that took place at a summer camp in upstate New York in 2005.

The outbreak had a total of 31 confirmed cases of mumps and 55% of the cases were known to have had two doses of mumps vaccine.

An analysis of the outbreak indicated that vaccination with two doses of mumps vaccine was 92% effective in preventing mumps, and vaccination with a single dose of vaccine was 80% effective (*Pediatrics* 2007;120:doi:10.1542/peds.2006-3451).

Nine of the cases occurred in individuals who had never been vaccinated, said Dr. Joshua K. Schaffzin of the New York State Department of Health, Albany, and his colleagues.

According to a previous report on the outbreak, the index case was a 20-year-old

**Of 368 campers, all had received at least one vaccination, and all but two had received two; 31 cases of mumps were identified despite the high rate of coverage.**

male camp counselor who came from the United Kingdom and had never been vaccinated against mumps.

On June 30, 2005, about 11 days after his arrival, he was evaluated in the camp infirmary for a left-sided parotitis, sore

throat, and a low-grade fever.

At the time, an epidemic of mumps was occurring in the United Kingdom, with 56,390 notified cases reported in England and Wales in 2005.

But mumps was not considered by the camp health care staff, and the counselor continued working.

During July 15-23, an additional 25 cases of parotitis were seen. On July 26, the New York State Department of Health became aware of the outbreak, cases were isolated, and the camp was quarantined.

According to the new report, 541 persons were at the camp that summer, including 368 campers, whose median age was 12 years, and 173 staff members, whose median age was 21 years.

Of the campers, all had received at least one mumps vaccination, and all but two had received two vaccinations. Of the staff, 21 were known to have never been vaccinated.

Thirty-one cases of mumps were identified in the camp, despite the high rate of vaccine coverage in the camp.

Twenty-six met case definitions for mumps, and six were tested for mumps IgG and IgM. Five of those six were positive for both.

Only one of the six had ever been vaccinated, and that individual had received two doses.

Twelve of the patients were campers and the rest were staff.

Of the 29 cases with certain vaccine history, 16 cases were individuals who had received two doses of mumps vaccine. Four cases had received one dose. And, nine had never been vaccinated.

The investigators determined that the attack rate for those who had never been vaccinated was 43%.

For those who had received vaccine once, it was 9%. And, among those who

had been vaccinated twice, it was 4%.

The investigators also found that, among those who had been vaccinated twice, the attack rates were lowest for those who had been vaccinated within 6 years of the outbreak (none of 72 individuals), and those who had been vaccinated more than 15 years before the outbreak (none of 3).

Among those in the middle, the attack rate was 4% for those vaccinated 6-10 years before the outbreak, and 7% for

those vaccinated 11-15 years before the outbreak.

While that finding might suggest that waning immunity was playing a role in who contracted mumps, a regression analysis did not demonstrate any linearity in the attack rates by the years since last vaccination, Dr. Schaffzin said.

There was no difference in the clinical manifestations or in the duration of illness between those who had been vaccinated and those who had not, he added. ■



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