

Pediatrics. 2007 Oct;120(4):e862-8.

Effectiveness of previous mumps vaccination during a summer camp outbreak.

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OBJECTIVES: Mumps is a vaccine-preventable disease that may cause outbreaks. In July 2005, an outbreak of mumps occurred during a children's summer camp in upstate New York. An investigation was initiated to describe the cases and evaluate vaccine effectiveness.

METHODS: A retrospective cohort study was conducted among 541 children from the United States and abroad who attended a 1- or 2-month overnight summer camp. Patients with mumps were interviewed; serologic analysis was conducted for 6 case patients. Vaccine effectiveness was calculated by retrospective review of immunization records for 507 attendees who were eligible for vaccination and had verified immunization history.

RESULTS: Thirty-one camp attendees were identified as having mumps (attack rate: 5.7%); 5 (83%) of 6 patients tested had positivity for mumps immunoglobulin M. Of the 507 participants (including 29 patients) with available immunization history, 440 (including 16 [87%] patients) were 2-dose recipients of mumps vaccine (attack rate: 3.6%); 46 participants (including 4 [9%] patients) were 1-dose recipients (attack rate: 8.7%); and 21 (including 9 [4%] patients) were unvaccinated (attack rate: 42.9%). Vaccine effectiveness was 92% for 2 doses and 80% for 1 dose.

CONCLUSIONS: Outbreaks of mumps in settings such as summer camps can occur despite high vaccination rates. Vaccine effectiveness for 2 mumps vaccinations was greater than vaccine effectiveness for 1 mumps vaccination. Therefore, recommendation of 2 mumps vaccinations for summer camp participants continues to be appropriate. Control of mumps disease relies on broad vaccination coupled with correct clinical diagnosis and strict control measures.

PMID: 17908742 [PubMed - indexed for MEDLINE]