

Outbreak of Serogroup C Meningococcal Disease among Preschool-Aged Children: Illinois, 1996

Outbreaks of serogroup C meningococcal disease in schools and communities have been reported with increasing frequency in the United States.¹ Clusters of serogroup C meningococcal disease may require public health officials to initiate vaccination campaigns. Guidelines for when a vaccination campaign is indicated have been established by the Advisory Committee on Immunization Practices.²

Four confirmed cases of meningococemia in Illinois in 1996 met the criteria for just such a vaccination campaign. On February 11 and 12, 1996, 4 cases of meningococemia were confirmed in a small Illinois community (population: 15 000). The cases occurred in boys 3 to 6 years of age who attended either a preschool in one location or a kindergarten in another location. The only connection found between the preschool and the kindergarten involved a single child who was not ill and who attended one of the schools during the day and the other for after-school programs.

The outbreak in Illinois was unique in that all 4 patients had meningococemia, were male, had onset of illness within the same 48-hour period, and were seen in the same hospital emergency room. In addition,

3 of the 4 patients were kindergarten classmates. All 4 cases were confirmed by culture as *Neisseria meningitidis* serogroup C and were enzyme-typed at the Centers for Disease Control and Prevention, via multi-locus enzyme electrophoresis, as enzyme type 24.

The decision to vaccinate all children from the age of 2 years through the eighth grade who resided in the town or attended school or preschool in the town was made in accordance with Advisory Committee on Immunization Practices guidelines; 4 cases occurred within a 2-day period, and the attack rate among children less than 10 years of age was 205 per 100 000 population.²

In a school-based approach, approximately 3500 children were vaccinated via jet injector guns. Vaccine coverage rates for the school clinics ranged from 86% to 94%, and 125 to 334 vaccinations were given per hour of jet injector gun use. No further cases of meningococcal disease occurred in the 16 months following chemoprophylaxis and vaccination. The cost of the outbreak to the town, including employee salaries, overtime, vaccine costs, chemoprophylaxis supplies, and other supplies, amounted to approximately \$78 851, or \$5.22 per town resident.

This outbreak indicates that contact in a kindergarten classroom might enable transmission of *N meningitidis*. In the Illinois case, the kindergarten children interacted with each other in the classroom, and teachers were unable to clearly identify

which children were likely to have had direct contact with case patients' respiratory secretions and thus require chemoprophylaxis. In addition, in the control of this outbreak, we found that acceptance of jet injector vaccination in the schools was high in the community. Jet injector guns were a valuable means of administering vaccine efficiently and with minimal cost. □

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