Unprotected People #66 Measles

Society Pays a High Price for Nonmedical Vaccination Exemption

On March 19, 2004, CDC published "Brief Report: Imported Measles Case Associated with Nonmedical Vaccine Exemption—Iowa, March 2004" in its electronic publication "MMWR Dispatch."

The article recounts the prodigious effort required to notify hundreds, perhaps thousands, of contacts of an unvaccinated 19-year-old man who returned to Iowa from New Delhi while contagious with measles. The article underscores the societal consequences of a parent's decision to withhold vaccination from a child because of religious reasons or personal beliefs. In this instance, the index patient, who had received a nonmedical exemption from measles vaccination, had the potential to infect susceptible people in four airports and on three airline flights across three continents. Because of high vaccination levels, measles is uncommon in the United States, with fewer than 200 cases reported annually since 1997. Such rosy statistics may lead some parents to assume measles has been "wiped out," calling into question the need for vaccination. In much of the developing world, however, measles is endemic. In 2002 alone, it infected 30 million susceptible people worldwide and claimed the lives of 614,000 children.

With every passing year, the world grows smaller, as more people travel internationally, coming into contact with people—and diseases—uncommon in their home communities. A parent who insists on vaccine exemption because of religious reasons or personal beliefs makes a decision to deny this reality. More importantly, such parents make a decision to abdicate individual responsibility for the health of communities their children live in, visit, or travel through. It is the quintessential example of a "bad neighbor" policy.

Reported by CDC and local and state public health departments in Iowa and Michigan, the "MMWR Dispatch" article is reprinted below in its entirety, excluding references.

Brief Report: Imported Measles Case Associated with Nonmedical Vaccine Exemption—Iowa, March 2004

On March 13, 2004, the Iowa Department of Public Health (IDPH) reported to CDC that a male student aged 19 years with measles in the infectious stage had flown from New Delhi, India, to Cedar Rapids, Iowa, on March 12. Because of a nonmedical exemption, the student had not received measles-containing vaccine (MCV). This report describes the measles case, the public health response to prevent secondary cases, and the impact on the public health system. Health-care providers and state and local public health departments should be alert to possible cases of measles in persons who traveled with this student or their contacts. Parents considering nonmedical exemptions for their children should be aware of the potential risk for disease both for their children and the public.

Measles is a highly infectious acute viral illness that can cause severe pneumonia, diarrhea, encephalitis, and death. Measles is not endemic in the United States because of high levels of vaccine coverage (>90% by age 3 years) and the requirement that school-aged children receive 2 doses of MCV. However, an estimated 745,000 measles deaths occur annually worldwide, making measles a major vaccine-preventable disease.

The index patient was a member of a group of approximately 28 students and two supervisors from college A in Iowa who had traveled to India, where approximately 52,000 cases of measles were reported in 2002. A high percentage of students from college A are reported to be unvaccinated because of nonmedical exemptions. Six measles cases occurred among the students while they were in India. The group had been scheduled to return to

(continued on next page)

the United States on March 7. To avoid potential spread during the prolonged airline flights, IDPH recommended that these six students stay in India for at least 4 days after rash onset (i.e., the period of infectivity). Contacts of these infectious students who lacked immunity for measles were asked to stay in India for 18 days after the last possible exposure. Despite these recommendations, the index patient, who was an unvaccinated contact, returned to the United States early, flying on March 12 from New Delhi through Amsterdam and the Detroit Metro Airport to Cedar Rapids, Iowa. During his travel, he had a cough and conjunctivitis, and within 24 hours of his arrival in Iowa on March 13, he had a rash. A local physician reported the case to IDPH. Subsequently, measles was confirmed serologically, and throat swab and urine specimens were collected for viral isolation.

On March 13, IDPH and the Michigan Department of Community Health (MDCH) issued press releases to alert air passengers, visitors, and employees who had been in the involved airports about their risk for measles exposure and state health advisories to alert physicians and enhance surveillance. On March 18, CDC issued a health advisory recommending that every person who had been on the plane with the student or who had been in one of the involved airports at the same time be evaluated and, if determined to be susceptible, receive MCV or immune globulin according to the recommendations of the Advisory Committee on Immunization Practices (ACIP). Measles vaccination clinics were held on March 14 at the office of Linn County Public Health (LCPH) in Iowa and on March 15 in Michigan. Passenger lists were subpoenaed from the airline, and LCPH, IDPH, and MDCH attempted to contact all passengers on flights with the index patient. Other states in which exposed passengers reside also are taking public health measures to control the potential spread of measles.

State and local public health departments should be alert to possible cases of measles in persons who traveled with this student or their contacts. Diagnosis can be confirmed by serologic testing. In addition to serologic (IgM) specimens, throat swabs or urine specimens should be collected for viral isolation.

The occurrence of six cases in this group of students who traveled abroad demonstrates the high transmissibility of measles when susceptible persons are exposed. The majority of states require 2 doses of MCV for children attending school and post-high school educational institutions; however, nonmedical exemptions are permitted in certain states. Persons who have chosen a nonmedical exemption from vaccination are >22 times more likely to acquire measles than persons who are vaccinated. In addition, increases in the number of persons who have chosen to be exempt increase the risk of disease in nonexempt persons. To reduce the risk of infection among travelers, ACIP recommends that all international travelers be immune to measles because the disease is endemic or epidemic in many parts of the world.

This case demonstrates the importance of following the ACIP recommendations and underscores the impact of nonmedical exemptions on the public health system. Physicians, public health authorities, and school personnel who counsel parents considering nonmedical exemptions for their children should ensure that parents understand the risk that opting out of vaccination places upon their children and the public.