

### **Permissive State Exemption Laws Contribute to Increased Spread of Disease**

The number of children with non-medical exemptions from school immunization requirements is increasing in the United States, particularly in states with philosophical and personal belief exemptions. Between 1991 and 2004, the percentage of children who obtained nonmedical exemptions from school immunization requirements increased from 0.98 to 1.48%.<sup>1</sup> Recently, outbreaks of vaccine preventable diseases (VPD) have occurred across the nation. Multiple studies have shown that geographic areas with VPD outbreaks are more likely to have high rates of school immunization exemptions among their school-aged children.<sup>2</sup>

Vaccines are the most effective tool for preventing infectious diseases. Historically, high rates of childhood immunization in the United States resulted in drastic long-term declines in VPD such as measles, mumps, and pertussis (whooping cough). Declines in VPD have also caused the public to become complacent and possibly forget the risks associated with contracting the diseases, which may influence the rate of vaccine refusal.

Children in the United States are required to receive a number of vaccines prior to entering school. Medical exemptions protect children with conditions like cancer, immune disorders, and allergy to vaccine components (e.g. egg whites or gelatin) where vaccination is medically contraindicated. Non-medical exemptions are granted for personal or religious beliefs. Allowances for exemptions vary by state. As of April 2009, all 50 states and the District of Columbia permitted medical exemptions from immunization requirements, 48 states allowed religious exemptions, and 20 allowed exemptions based on philosophical or personal beliefs.<sup>3</sup> Steps required for obtaining exemptions range from signing a prewritten statement on a school immunization form to writing a personal letter explaining one's reasons for refusing vaccination.

States with less rigorous procedures for obtaining exemptions have higher exemption rates. Between 1991 and 2004, the percentage of children who obtained nonmedical exemptions from school immunization requirements increased from 0.98 to 1.48%.<sup>1</sup> This burden was not shared equally. The average exemption rate increased from 1.3 to 2.5% in states that have easy processes for gaining exemptions and from 0.99 to 2.54% in states that permitted exemptions to be granted for philosophical or personal beliefs. In contrast, average exemption rates did not significantly increase in states that only offered religious exemptions or in states that had more difficult processes for obtaining an exemption.

The risk associated with the increase in the number of children with nonmedical exemptions is amplified because these children are often geographically clustered. In general, vaccine refusal by the parents is associated with ease of obtaining exemptions from school immunization requirements for their children. Data shows that states with easy procedures have higher rates of VPD. Between 1986 and 2004, the mean number of pertussis (whooping cough) cases per year in states allowing personal belief exemptions was more than double that of states offering only religious exemptions. The mean number of cases per year between 1991 and 2004 was almost twice as high in states with easy-to-obtain exemptions as in states with difficult-to-obtain exemptions.<sup>1</sup> In Michigan, where it is easy to obtain non-medical exemptions, areas reporting high exemption rates were 3 times more likely to be within a geographic cluster of pertussis cases (see Figure 1).

High and consistent immunization coverage is necessary to prevent the spread of VPD and, more importantly, to protect those who cannot be vaccinated because of age or medical reasons. Also, because no vaccine is 100% effective, some vaccinated persons are still at risk for disease. Unvaccinated children increase the risk of transmitting VPD to both unvaccinated and undervaccinated children. While only 0.3% of children in the United States have received no vaccinations, these children tend to cluster in certain geographic areas. Even when overall vaccination rates are high across a larger geographic area, such clustering of unvaccinated children in certain smaller communities within the geographic area diminishes the herd immunity of everyone that lives in that area. A number of recent outbreaks of VPD are thought to be associated with

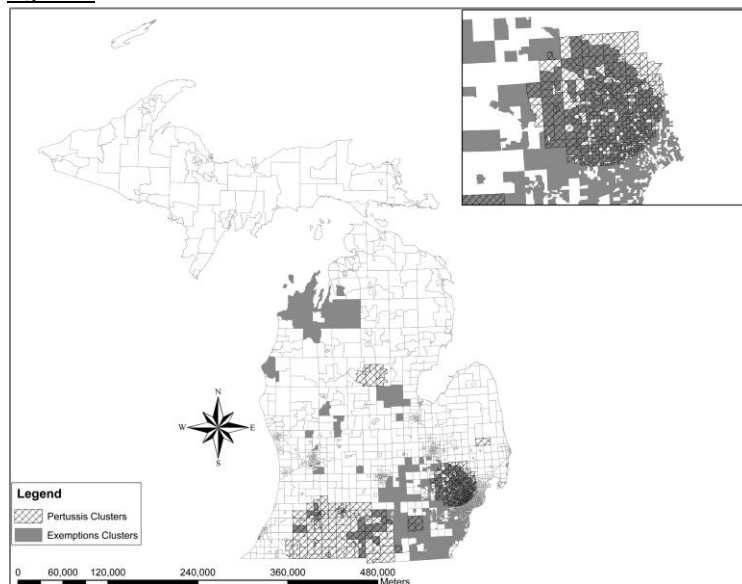
geographic clusters of unvaccinated people, including outbreaks of measles and mumps in New York City, and the current pertussis outbreak in California.

To address the risk of VPD, states should consider adopting more rigorous standards for non-medical vaccine exemptions that require parents to demonstrate that they have made a conscious, concerted, and informed decision in requesting these exemptions for their children. An example of such a standard might include a requirement for parents to complete a form that explicitly states the grounds for the exemption and requires them to acknowledge awareness of the disease-specific risks associated with not vaccinating their child(ren).

*Easy to Obtain Exemptions:* States use a form that requires only the signature of a parent or guardian. The form is available through the school, and the signature does not need to be notarized. No research by the parent is required, and no special visits need to be made.

*Difficult to Obtain Exemptions:* States require that the signature on the form or letter be notarized or requiring both a form, obtained from the health department, and a letter. Some states require an additional letter from a religious official or the signature of a state official

**Figure 1**



*Figure 1. Geographic Distribution of Significant Pertussis Case and Immunization Exemption Clusters in Michigan, 1993-2004. (Figure from Saad B. Omer, Kyle S. Enger, Lawrence H. Moulton, Neal A. Halsey, Shannon Stokley, and Daniel A. Salmon. Geographic clustering of nonmedical exemptions to school immunization requirements and associations with geographic clustering of pertussis. Am. J. Epidemiol. (2008) 168(12): 1389-1396.)*

**References**

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