Immunization Coverage Rates Continue to Rise

BY DIANA MAHONEY
New England Bureau

More than three-quarters of the nation's young children have been immunized with the full series of childhood vaccines recommended by the Centers for Disease Control and Prevention, according to data released today from the agency's 2007 National Immunization Survey.

The National Immunization Survey provides coverage estimates for the 4:3:1:3:3:1 immunization series for children aged 19-35 months that includes vaccines for diphtheria, tetanus, and acellular pertussis (DTaP); poliovirus; measles, mumps, and rubella (MMR); *Haemophilus influenzae* type b; hepatitis B; and varicella.

All but one vaccine in the recommended series—the fourth dose of the DTaP vaccine—reached 90% coverage in 2007, including for the first time the varicella vaccine and the third dose of the seven-valent pneumococcal conjugate vaccine (PCV7), Dr. Julie Gerberding, director of the CDC, reported in a media briefing on the survey results.

Additionally, less than 1% of the more than 17,000 children born between January 2004 and July 2006 represented in the survey had not received any vaccines in the recommended series by ages 19-35 months, and there were no statistically significant decreases in individual vaccine coverage from 2006 to 2007 (MMWR 2008;57:961-6).

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DR. GERBERDING

The coverage rates are indicative of the "ongoing success" of the country's immunization program, said Dr. Gerberding. "This annual report card is very good. The survey indicates that we are at or above our Healthy People 2010 goal of 90% coverage for each of the vaccines [in the 4:3:1:3:3:1 series], and at 77.4%, we are close to the target of 80% for the combined series."

These numbers are a reflection of "the trust that parents have in the safety of the vaccines and in the health care providers who administer them," she said.

Relative to the 2006 survey data, coverage levels in 2007 for one dose of the varicella vaccine increased from 89% to 90%, and coverage levels for three or more doses of the PCV7 increased from 87% to 90%, Dr. Gerberding reported.

As in previous years, the estimated vaccine coverage rates for the 4:3:1:3:3:1 series varied substantially among states, ranging from a low of 63% in Nevada to a high of 91% in Maryland. Similarly, there was substantial variation among 14 local areas surveyed, ranging from 70% in San Bernardino County, Calif., to 82% in Philadelphia, she said.

Despite regional coverage gaps, noted Dr. Gerberding, "vaccine coverage levels were similar across all racial and ethnic groups for the complete series, and there were some important gains."

Specifically, among Native American and Alaska Native children, both varicella and fourth-dose PCV7 coverage increased significantly, from 85% in 2006 to 95% in 2007 for varicella and from 63% in 2006 to 80% for PCV7 in 2007, she said.

Belying the apparent successes in the immunization program is the recently reported surge in U.S. measles outbreaks (MMWR 2008;57:893-6), which is "a sobering aspect in our failure to protect some children from vaccine-preventable diseases," said Dr. Gerberding. "Many of the children affected in these outbreaks were not adequately protected. Some were too young to be fully immunized, and some parents chose not to immunize their children."

The measles outbreaks serve as an important reminder to maintain heightened vigilance "and not take the benefits of immunizations for granted," said Dr. Anne Schuchat, who is director of the CDC's National Center for Immunization and Respiratory Diseases. "We're doing well, but we're not finished. Achieving high [coverage] levels is important for preventing major resurgences in diseases like measles."

The survey estimates state and national coverage levels and provides information on specific local areas, "but we don't have information for every local area," Dr. Schuchat pointed out. "If nonimmunized kids are clustered in small areas of the United States, that might not be visible in national or state coverage rates, yet that clustering is enough to lead to measles transmission." ■

New Child Biopsy Data Refute Link Between Measles, Mumps, Rubella Vaccine and Autism

BY HEIDI SPLETE
Senior Writer

The measles, mumps, and rubella vaccine was not associated with a diagnosis of autism in children who were aged 3-10 years, based on data from 25 children with autism and 13 controls.

These findings contradict the results of a 2002 study in which traces of the measles virus were found in biopsies taken from the bowel tissue of children with autism. The data from the 2002 study suggested that the live virus from the measles, mumps, and rubella (MMR) vaccine would lodge and grow in a child's intestinal tract, causing damage there.

The hypothesis was that the virus also would cause inflammation and damage to the central nervous system, resulting in autism symptoms.

If this theory was correct, however, then tissue biopsies from autistic children should show traces of the MMR vaccine, whereas biopsies from control children without autism should not, the researchers noted.

The current study also refutes a decade-old study that first suggested that the onset of behavioral abnormalities in a small group of children who had autism spectrum disorders and gastrointestinal problems coincided with their having received the MMR vaccine.

To identify a possible link between measles virus in the GI tract and autism, Dr. Mady Hornig of Columbia University in New York, and colleagues examined bowel tissue from children with autism spectrum disorders and GI problems. They compared the biopsies with bowel tissue from children who had GI problems but did not have autism (PLoS ONE 2008;3:e3140).

The researchers found that there were no significant differences in the presence of RNA from the measles virus in the biopsies from the autistic children, compared with the children who were not autistic.

All of the children had received the MMR vaccine, but the researchers detected trace amounts of measles RNA (fewer than 10 copies) in only one child with autism and one control child.

The average age of the autism and control groups at the time of the first MMR vaccination was 15 months and 16 months, respectively; the average interval between the MMR vaccination and the tissue biopsy was 41 months and 40 months, respectively. A total of 12 of the 25 (48%) autistic children had received MMR vaccine before their GI problems began, compared with 3 of 13 (23%) controls. But this difference was not statistically significant.

Children with autism who received the first MMR vaccine before the onset of their GI problems were significantly older when their GI problems began, compared with the children with autism who had GI problems before they received the vaccine. Children with GI problems before their autism diagnoses were significantly younger than children who developed GI problems after they were diagnosed with autism. A chi-square analysis "indicated no role for MMR in either the pathogenesis of autism or GI dysfunction," Dr. Hornig and colleagues noted.

"If MMR is causally related to either GI disturbances or autism it should precede their onset," the researchers wrote. Instead, they found that the order of MMR vaccine administration, the onset of GI problems, and the onset of autism was "inconsistent with a causal role for MMR vaccine as a trigger or exacerbator of either GI disturbances or autism," they explained.

The study was limited by the small group of children, but no previous studies have examined the tissue from children with autism and gastrointestinal problems specifically to assess links to vaccines. The characteristics of gastrointestinal problems within the population of children with autism remain unclear, and more research is needed, Dr. Hornig and associates added.

The study was supported in part by a grant from the Centers for Disease Control and Prevention to the American Academy of Pediatrics, and by an award from the National Institutes of Health. Dr. Hornig disclosed no financial conflicts. ■

Expanded Cancer Prevention Claim Approved for Gardasil

The human papilloma virus vaccine, Gardasil, has been approved for a new claim: preventing vaginal and vulvar cancer caused by HPV types 16 and 18, in females aged 9-26, the Food and Drug Administration announced.

The approval is based on follow-up of more than 15,000 participants in the original studies of Gardasil, which found that about 2 years after vaccination, the vaccine was "highly effective" in preventing precancerous vulvar and vaginal lesions caused by HPV types 16 and 18 among females who tested negative for these two types when the study began. Among females in the control group who did not receive the vaccine, 10 developed precancerous vulvar lesions and nine developed precancerous vaginal lesions, which were related to HPV types 16 or 18, according to the FDA statement announcing the approval.

However, there was no evidence that females who had already been infected with the HPV types in the vaccine derived any benefit from the vaccine.

"While vulvar and vaginal cancers are rare, the opportunity to help prevent them is potentially an important additional benefit from immunization against HPV," Dr. Jesse Goodman, director of the FDA's Center for Biologics Evaluation and Research, said in the statement.

Gardasil, manufactured by Merck & Co., was approved in 2006 in females aged 9-26 years for the prevention of cervical cancer caused by HPV type 16 and 18, precancerous genital lesions caused by HPV types 6, 11, 16, and 18, and genital warts caused by HPV types 6 and 11.

HPV types 16 and 18 cause an estimated 70% of cervical cancers and other cancers related to HPV.

—By Elizabeth Mechcatie

More information on the approval is available at: www.fda.gov/cber/products/gardasil.htm.