# Coverage Rates Higher With Combo Vaccines

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A study of more than 18,000 infant records in a Medicaid database found that use of combination vaccines significantly improved immunization coverage rates of the vaccines studied in children through age 24 months.

This study "is the first in the United States to suggest a positive effect of combination vaccines on pediatric immunization coverage rates," the authors of the study concluded (Pediatr. Infect. Dis. J. 2007;26:496-500). They pointed out that while there are clear advantages of combination vaccines, such as a reduction in pain and anxiety, there is not much evidence for other possible advantages of these vaccines.

Dr. Gary S. Marshall of the University of Louisville (Ky.) and his associates reviewed claims from the Georgia Medicaid Department of Community Health Medicaid Program on infants born from Jan. 1 through Sept. 30, 2003, evaluating vaccine coverage rates among 18,821 infants enrolled in the program through 24 months of age.

**The Medicaid study looked at the percentage of children who received at least the recommended number of doses for each vaccine by the age of 24 months.**

The 16,007 children in the combination cohort had received at least one dose of the combination vaccines containing the hepatitis B vaccine (HepB) and *Haemophilus influenzae* type b conjugate vaccine (Hib), marketed as Comvax, or Pediarix, which combines the diphtheria and tetanus toxoids and acellular pertussis vaccine (DTaP), HepB, and inactivated polio vaccine (IPV). The remaining 2,814 children had not received any doses of either combination vaccine. In the combination cohort, 68% had received at least one dose of HepB/Hib, and 44% had received at least one dose of DTaP/HepB/IPV.

The main outcome of the study was coverage rates (the percentage of children who received at least the recommended number of doses for each vaccine by 24 months of age). The vaccine series analyzed were the 4:3:1 series (four DTaP, three IPV, one MMR); 4:3:1:3:1 (four DTaP, three IPV, one MMR, three Hib, one varicella); and 3:3:3 (three DTaP, three IPV, three Hib).

After controlling for gender, birth quarter, race, rural or urban county of residence, and other potential confounders, the researchers found that having received at least one dose of a combination vaccine was independently associated with greater coverage rates for each vaccine or vaccine series at 24 months of age—except for MMR, Hib, and varicella.

For example, those who received a combination vaccine were 26% more likely to receive 4 DTaP vaccines, and 2.5 times more likely to receive 3 DTaP vaccines, and were 28% more likely to receive the 4:3:1 series, compared with those who had not received a combination vaccine.

The study had limitations, such as the potential for over- and underreporting of vaccinations in administrative claims databases, Dr. Marshall and associates noted. But they added that their results suggest that the use of combination vaccines has "the potential to remedy" problems in delivering all recommended vaccines at the recommended ages as new vaccines are introduced. Future studies could focus on other patient populations, such as those in the private sector, as well as the timeliness, cost, and other outcomes of combination vaccines, they suggested.

Dr. Marshall (the lead author) and some of the other researchers are from the University of Louisville, Ky; other investigators were from the Georgia Medicaid program and Xcenda, listed in the study's acknowledgments section as a research service company contracted by Pediarix manufacturer GlaxoSmithKline (GSK) to help conduct the study. The acknowledgments also stated that Dr. Marshall has been an investigator in clinical trials funded by GSK and competitors—including Sanofi Pasteur and Comvax manufacturer Merck—and has received honoraria for lectures and service on advisory board for these companies. In addition, Dr. Charles Woods, another author also at the university, has been an investigator on clinical trials funded by Sanofi Pasteur and Merck, and has received honoraria for lectures and service on their advisory boards. ■