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ARTICLE

Vaccine Effectiveness Against Laboratory-Confirmed Influenza in Children 6 to 59 Months of Age During the 2003–2004 and 2004–2005 Influenza Seasons

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OBJECTIVE. The goal was to estimate the effectiveness of influenza vaccination against laboratory-confirmed influenza during the 2003–2004 and 2004–2005 influenza seasons in children 6 to 59 months of age.

METHODS. We conducted a case-control study with children with medically attended, acute respiratory infections who received care in an inpatient, emergency department, or outpatient clinic setting during 2 consecutive influenza seasons. All children residing in Monroe County, New York, Davidson County, Tennessee, or Hamilton County, Ohio, were enrolled prospectively at the time of acute illness and had nasal/throat swabs tested for influenza with cultures and/or polymerase chain

reaction assays. Children with laboratory-confirmed influenza were case subjects and children who tested negative for influenza were control subjects. Child vaccination records from the parent and the child's physician were used to determine and to validate influenza vaccination status. Influenza vaccine effectiveness was calculated as (1 – adjusted odds ratio) x 100.

RESULTS. We enrolled 288 case subjects and 744 control subjects during the 2003–2004 season and 197 case subjects and 1305 control subjects during the 2004–2005 season. Six percent and 19% of all study children were fully vaccinated according to immunization guidelines in the respective seasons. Full vaccination was associated with significantly fewer influenza-related inpatient, emergency department, or outpatient clinic visits in 2004–2005 (vaccine effectiveness: 57%) but not in 2003–2004 (vaccine effectiveness: 44%). Partial vaccination was not effective in either season.

CONCLUSIONS. Receipt of all recommended doses of influenza vaccine was associated with halving of laboratory-confirmed influenza-related medical visits among children 6 to 59 months of age in 1 of 2 study years, despite suboptimal matches between the vaccine and circulating influenza strains in both years.