

Examination of gastroenteritis hospitalization rates following use of rotavirus vaccine

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Credit: National Cancer Institute

Following implementation of rotavirus vaccination in 2006, all-cause acute gastroenteritis hospitalization rates among U.S. children younger than 5 years of age declined by 31 percent - 55 percent in each of the post-vaccine years from 2008 through 2012, according to a study in the June 9 issue of *JAMA*.

Eyal Leshem, M.D., of the U.S. Centers for Disease Control and Prevention, Atlanta, and colleagues examined both all-cause gastroenteritis and rotavirus-related hospitalizations among [children](#) younger than 5 years from 2000 through 2012. The researchers analyzed State Inpatient Databases of the Healthcare Cost and Utilization Project, which capture hospitalizations in community and academic hospitals. The analyses were restricted to 26 states that consistently reported hospital discharge data each year during 2000 through 2012. Approximately 74 percent of U.S. children younger than 5 years resided in these 26 states.

The analyses included 1,201,458 all-cause [acute gastroenteritis](#) hospitalizations among children younger than 5 years of age during 2000 through 2012, of which 199,812 (17 percent) were assigned a rotavirus-specific code. The researchers found that compared with the pre-vaccine average annual acute gastroenteritis hospitalization rate of 76 per 10,000 among children younger than 5 years, post-vaccine introduction rates declined by 31 percent in 2008, 33 percent in 2009, 48 percent in 2010, 47 percent in 2011, and 55 percent in 2012. Similar rate declines were noted in both males and females, all race/ethnicity groups, and all age groups, with the greatest reductions among children age 6 months to 23 months.

Compared with the pre-vaccine average annual rotavirus-coded [hospitalization rate](#) of 16 per 10,000 among children younger than 5 years, rates of rotavirus-coded hospitalizations post-vaccine introduction declined by 70 percent in 2008, 63 percent in 2009, 90 percent in 2010, 79 percent in 2011, and 94 percent in 2012.

By 2012, children 48-59 months of age (the oldest age group studied) were age eligible for the vaccine and during this year the estimated rotavirus vaccination coverage among children 19-35 months of [age](#) reached 69 percent compared with 44 percent - 67 percent during 2009

through 2011. "With an increase in vaccine coverage, herd protection may have contributed to larger declines in rotavirus hospitalizations. In 2012, when vaccine coverage was highest, the greatest reductions were observed for all-cause acute gastroenteritis (55 percent) and rotavirus-coded (94 percent) hospitalizations," the authors write.

"The most recent reported coverage of 73 percent for a full [rotavirus vaccine](#) series is lower than that of other established childhood vaccines so our findings support continued efforts to increase rotavirus [vaccine coverage](#)."

More information: *JAMA*, [DOI: 10.1001/jama.2015.5571](https://doi.org/10.1001/jama.2015.5571)

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