

Study: Compared to recent flu strains, 2009 H1N1 infection had lower risk of most serious complications

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An analysis of data from influenza cases in Wisconsin indicates individuals with 2009 H1N1 infections were younger than those with H3N2 (2007-2008), and that the risk of most serious complications was not higher in adults or children with 2009 H1N1 compared with recent seasonal strains, according to a study in the September 8 issue of *JAMA*.

"The [pandemic](#) 2009 [influenza](#) A(H1N1) virus caused widespread transmission in the United States and other countries. The [Centers for Disease Control and Prevention](#) (CDC) estimates that 43 million to 89 million infections occurred in the United States from April 2009 through April 10, 2010, with mid-range estimates of 274,000 H1N1-related hospitalizations and 12,470 deaths. Children, young adults, pregnant women, and individuals with underlying chronic medical conditions appear to have a higher risk of hospital admission and critical illness when infected with the pandemic virus," the authors write. "The clinical characteristics of pandemic 2009 influenza A(H1N1) infections have not been compared directly with illnesses caused by other influenza A strains."

Edward A. Belongia, M.D., of the Marshfield Clinic Research Foundation, Marshfield, Wisc., and colleagues conducted a study to compare the characteristics of pandemic and [seasonal influenza](#) A infections occurring in a defined population. The study consisted of active surveillance with 30-day follow-up for influenza cases among

children and adults living in a 14-zip code area in Wisconsin. Patients with subjective fever, chills, or cough of fewer than 8 days' duration were screened for eligibility during an outpatient or inpatient encounter. Consenting patients were interviewed and tested for influenza A during the 2007-2008 and 2008-2009 influenza seasons and from May to November 2009; 6,874 patients (70 percent-86 percent of eligible patients) agreed to participate. Medical records were reviewed to assess outcomes.

The researchers identified 2009 H1N1 influenza in 545 patients; 221 cases of seasonal H1N1; and 632 patients with H3N2 infection. The median (midpoint) ages of infected participants were 10, 11, and 25 years, respectively.

In children, 2009 H1N1 infection was not associated with either hospital admission or pneumonia compared with seasonal H1N1 or H3N2. Hospital admission occurred within 30 days for 6 of 395 children with 2009 H1N1 (1.5 percent), 5 of 135 with seasonal H1N1 (3.7 percent), and 8 of 255 with H3N2 (3.1 percent). Among adults, hospital admission occurred in 6 of 150 with 2009 H1N1 (4.0 percent), 2 of 86 with seasonal H1N1 (2.3 percent), and 17 of 377 with H3N2 (4.5 percent).

Among adults, pneumonia occurred in 4.0 percent of those with 2009 H1N1 infection; 2.3 percent of patients with seasonal H1N1; and 1.1 percent of those with H3N2 infection. Pneumonia occurred in 2.5 percent of children with 2009 H1N1; 1.5 percent of children with seasonal H1N1; and 2.0 percent with H3N2. There were no significant differences by strain in the proportion of children or adults with any serious outcome (pneumonia or hospital admission) during the 30 days after onset.

"Our results suggest that the clinical manifestations and risk of hospital admission are similar for 2009 H1N1 and other seasonal influenza A

strains among those presenting for medical care and documented to have influenza infection," the authors write.

"In summary, we found that children were disproportionately affected by 2009 H1N1 infection, but the perceived severity of symptoms and risk of serious outcomes (pneumonia or hospital admission) were not increased in [children](#) with 2009 H1N1 infection relative to seasonal influenza A viruses. This study demonstrates the benefit of ongoing active influenza surveillance in a defined cohort with standardized testing criteria and uniform collection of clinical and epidemiologic data. The use of consistent enrollment and testing procedures offers the opportunity to directly compare illness patterns and outcomes over multiple seasons, and these results complement information obtained through traditional public health surveillance systems."

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