

# Among deaths from H1N1, pregnant women appear to have high risk

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Pregnant women had a disproportionately higher risk of death due to 2009 influenza A(H1N1) in the U.S., and early antiviral treatment appeared to be associated with fewer admissions to an ICU and fewer deaths, according to a study in the April 21 issue of *JAMA*.

Although the 2009 influenza A(H1N1) pandemic has generally been characterized as a self-limited uncomplicated infection, there have been severe illnesses and deaths, and early data suggest [pregnant women](#) are at increased risk of hospitalization and death. "Changes in the immune, cardiac, and respiratory systems are likely reasons that pregnant women are at increased risk for severe illness with influenza," the authors write.

Alicia M. Siston, Ph.D., of the [Centers for Disease Control and Prevention](#), Atlanta, and colleagues analyzed data on influenza cases of pregnant women reported to the CDC, with symptom onset from April through December 2009. Included in the outcomes researchers examined were seventy of illness (hospitalizations, [intensive care unit](#) [ICU] admissions, and deaths) due to 2009 influenza A(H1N1), stratified by timing of antiviral treatment and pregnancy trimester at symptom onset.

During the initial period of data collection (April-August 2009), a total of 788 cases of influenza A(H1N1) among pregnant women were reported. Among those, 30 died (5 percent of all reported 2009 influenza A[H1N1] deaths in this period). Among 509 hospitalized women, 115 (22.6 percent) were admitted to an ICU. Pregnant women with treatment more than 4 days after symptom onset were six times more likely to be

admitted to an ICU (56.9 percent vs. 9.4 percent) than those treated within 2 days after symptom onset.

"Updating these data with the CDC's continued surveillance of ICU admissions and deaths among pregnant women with symptom onset through December 31, 2009, identified an additional 165 women for a total of 280 women who were admitted to ICUs, 56 of whom died. Among the deaths, 4 occurred in the first trimester (7.1 percent), 15 in the second (26.8 percent), and 36 in the third (64.3 percent)," the authors write.

"Pregnant women represent approximately 1 percent of the U.S. population, yet they accounted for 5 percent of U.S. deaths from 2009 influenza A(H1N1) reported to the CDC. The data reported herein are consistent with previous studies that demonstrate that pregnant women with influenza are at increased risk of serious illness and death. In addition, delayed treatment of antiviral therapy was associated with more severe illness and death as previously shown for both seasonal influenza and 2009 influenza A(H1N1), whereas early treatment initiation has been associated with reduced illness duration, symptom severity, mortality, and incidence of secondary complications, hospitalizations, and need for antibiotics. Our analysis supports current public health recommendations for pregnant women that include vaccination with 2009 influenza A(H1N1) monovalent vaccine and early treatment of women who present with possible 2009 influenza A(H1N1) with antiviral medications."

The authors add that despite these recommendations, pregnant women may be reluctant to receive and clinicians appear to be reluctant to offer seasonal influenza vaccination. "To increase uptake further, pregnant women and their clinicians should be educated about the risks associated with influenza during pregnancy and made aware of the recommendations that vaccine can prevent illness from both seasonal

influenza and 2009 [influenza](#) A(H1N1)."

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