

**2009 H1N1 Influenza
Updated Key Points
October 8, 2009**

What's New and Updated

- NEJM Article: "Hospitalized Patients with 2009 H1N1 Influenza in the United States – April-June 2009"

New England Journal of Medicine Article: "Hospitalized Patients with 2009 H1N1 Influenza in the United States – April-June 2009"

- This study published today in the *New England Journal of Medicine (NEJM)* by CDC researchers in collaboration with state public health departments analyzed the clinical characteristics of patients hospitalized with 2009 H1N1 flu virus infections in the United States during April through June 2009. This study is available at <http://content.nejm.org/cgi/content/full/NEJMoa0906695>
- Cases were defined as any person hospitalized for 24 hours or more with influenza-like illness (ILI)* and who tested positive for influenza A 2009 H1N1 by real-time reverse transcriptase polymerase chain reaction (rRT-PCR)**.

*ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and a cough and/or a sore throat in the absence of a KNOWN cause other than influenza

**For more information on rRT-PCR and testing for flu, see http://www.cdc.gov/h1n1flu/diagnostic_testing_public_qa.htm

- Information was collected on 272 patients; 25% were admitted to the intensive care unit (ICU) and 7% died.
- Results of the study showed the following:
 - 45% of patients hospitalized were children younger than 18 years old.
 - 55% of patients hospitalized were adults 18 years of age or older.
 - Only 5% of patients hospitalized were 65 years of age or older.
 - 73% of patients hospitalized had 1 or more underlying conditions, including asthma, diabetes, heart, lung, or neurologic disease, and pregnancy.
- Asthma was the most common underlying medical condition and was found in 29% of children and 27% of adults who were

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hospitalized with an underlying medical condition. Note: asthma occurs in 8% of the U.S. population.

- 100 out of 249 patients (40%) who had chest radiographs performed upon admission to the hospital had findings consistent with pneumonia.
- 200 out of 268 patients (75%) received flu antiviral medicines, which were started a median of 3 days from onset of illness.
- Although only 70% of patients had reported their height and weight, 45% of these patients were either obese (29%) or morbidly obese (26%). However, the majority (81%) of these patients also had an underlying condition known to increase their risk for flu-related complications.
 - For adults included in the study, the prevalence of obesity (29%) was comparable to the estimated obesity prevalence in the adult U.S. population (27%).
 - However, the prevalence of morbid obesity (26%) was higher than that estimated (5%) in the adult U.S. population.
- Among patients who were admitted to the ICU or died, the median time from illness onset to antiviral initiation was 5 days (range 0 – 24 days). Only 23% of patients admitted into the ICU or who died received antivirals within 48 hours of illness onset.
- The results of the study have lead CDC researchers to make the following conclusions:
 - 2009 H1N1 infections have caused severe illness, including pneumonia and death.
 - Delays in therapy were associated with more severe outcomes, such death and admittance into the intensive care unit (ICU).
 - Medical conditions associated with seasonal flu-related complications were prevalent among hospitalized patients with 2009 H1N1.
 - Unlike seasonal flu, few of the hospitalized patients were 65 years of age and older.
 - Clinicians should consider 2009 H1N1 infection and initiate empiric antiviral treatment for the following groups:

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- Hospitalized patients with acute respiratory illness – even if beyond 48 hours of illness onset, especially patients with suspected pneumonia, and those with increased risk for complications, including pregnant women.
- Patients who are not hospitalized, but who have underlying conditions that increase their risk for influenza-related complications, including pregnant women.
- Although at this time obesity has not been linked with increased risk for flu-related complications, further investigation is warranted.