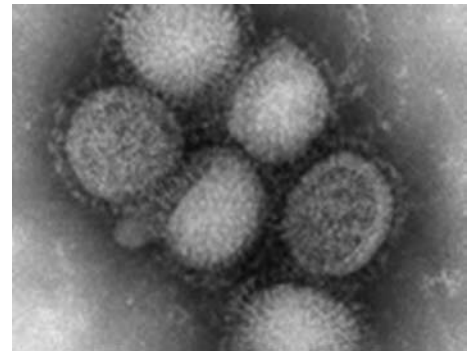


# Swine influenza or Swine flu or H1N1 flu

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The first incidents of swine influenza were reported in Mexico and in the U.S.A. in April 2009. This type of flu is caused by H1N1 virus, a new rapidly spreading viral species responsible for influenza A. As a result of its rapid spread, in June 2009 the World Health Organization (WHO) declared a state of pandemic, which raised



public anxiety and concern. The name "swine flu" was given because the initial laboratory findings showed that many of the viral genes identified in affected patients are similar to those of other viruses responsible for swine influenza. However, it was later proved, after a more thorough analysis, that the H1N1 virus carries a triple combination of two genes from swine influenza viruses, one gene from avian influenza virus and one from human influenza virus. Subsequent to these findings, the term "quadruple reassortant virus" was introduced.<sup>1</sup>

Swine influenza virus is transmitted among humans in the same manner as seasonal flu (cough, sneezing, direct contact). The signs and symptoms of H1N1 influenza are also similar to those of influenza A, and some individuals present predominantly with diarrhoea and vomiting. The disease can present in a mild or a severe form, and many patients are able to recover without any medical care. H1N1 influenza differs from the seasonal flu in that it has a lower affinity for the third age (it mostly affects people under 65 years), and that specific diagnostic methods are required for detection of the virus.<sup>1</sup> The epidemiology of the disease is still unclear, because of the variability of determining parameters as the virus continues spreading. It is known, however, that its incidence is higher in individuals aged 5-24 years and lower in the age group >65 years.<sup>2,3</sup> The average age of patients with confirmed H1N1 influenza requiring hospitalization is 20 years and of those with poor outcome 37 years.<sup>2</sup> The risk factors for the development of serious disease are the same as those for seasonal influenza A (i.e., heart, liver, kidney or respiratory failure, diabetes mellitus, immunosuppression, malignancy, pregnancy). The incidence rate in pregnant women is 4 times that in the general population. Malignant obesity appears to have a significant contribution in the severity.<sup>4</sup> The final diagnosis of H1N1 influenza requires

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the detection of the H1N1 virus with reverse-transcription real time polymerase chain reaction (PCR) or viral culture.<sup>5</sup> Patients with 2009 H1N1 influenza can spread the virus from one day prior to the development of symptoms until 5-7 days later, although transmissibility may last longer in immunosuppressed patients and children.

The management of H1N1 influenza comprises both *prevention* and *treatment*. Prevention is based on avoiding exposure, especially of compromised population groups, to a contaminated environment (such as inhaling contaminated air), compliance with personal hygiene rules (hand washing with soap and water or alcohol-based hand cleaners, following every contact with a patient or objects used by a patient), and taking precautionary measures (face mask, gloves, gowns, head and foot covers) prior to every contact with a hospitalized patient. Currently there is no vaccine available against the H1N1 virus, but all compromised patients should be vaccinated against the seasonal flu. Compromised groups are considered to be: children aged 6 months-19 years, pregnant women, people aged over 50 years, patients with chronic diseases, institutionalized patients and people living in a crowded environment, and particularly people occupied in health service departments.<sup>4</sup>

The new separate vaccine against H1N1 virus is expected to be available at the end of October 2009. According to the U.S. Centers for Disease Control and Prevention, the following 5 population groups should be vaccinated first: *a) pregnant women, b) people living with or responsible for the care of infants aged < 6 months, c) medical, nursing and paramedical staff, d) people aged 6 months-24 years, and e) people aged 25-64 years with concomitant diseases that are considered high-risk for developing complications from the influenza (Table).*<sup>4</sup>

Treatment of H1N1 influenza includes administration of the antiviral medications oseltamivir or zanamivir. These drugs aim to reduce the severity of the symptoms and the duration of the disease, and it is suggested that they may prevent the development of complications. Antiviral therapy is indicated preventively for 10 days in persons in a high risk category for developing the disease, and therapeutically for 5 days in all patients with confirmed H1N1 influenza. In adults, oseltamivir should be administered preventively at a dose of 75 mg daily and therapeutically 75 mg b.i.d., while in children aged over 12

**TABLE.** High-risk groups who are recommended to be vaccinated against H1N1 virus, according to World Health Organization (WHO) and U.S. Centers for Disease Control (CDC) and Prevention

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- Pregnant women
  - People responsible for the care of infants aged < 6 months
  - Medical, nursing and paramedical staff
  - People aged 6 months-24 years
  - People aged 25-64 years with concomitant diseases that are considered high-risk for developing complications from influenza.
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months the dose is weight-dependent.<sup>6</sup> Zanamivir should be administered preventively at a dose of 2 inhalations (5 mg) daily, and therapeutically 2 inhalations (5 mg) b.i.d. for adults and children aged over 5 years (preventively) and 7 years (therapeutically).<sup>6</sup>

The successful management of H1N1 influenza requires increased surveillance to prevent its dissemination, early treatment to improve outcome, and provision of supervised information. Most importantly, however, successful management requires avoiding PANIC.

## LITERATURE

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