

**Health Advisory: Oseltamivir resistant novel Influenza A H1N1
August 14, 2009**

Action requested:

- **Be aware that two cases of oseltamivir-resistant novel influenza A H1N1 infection have been reported in patients treated in King County health care facilities**
 - **Both were immunosuppressed patients treated with oseltamivir**
 - **No epidemiologic links were found between these cases**
 - **Illness has not been more severe, and oseltamivir-resistant viruses have not been identified among close contacts or health care workers**
- **Closely monitor immunosuppressed patients receiving treatment for novel influenza A (H1N1) virus infection for the development of antiviral resistance**
 - **Adhere to infection control and personal protective equipment (PPE) recommendations until patients test negative for influenza.**
 - **Work with infection control staff to identify prolonged shedding of novel H1N1 virus in immunosuppressed patients to facilitate appropriate infection control measures.**
- **Use zanamivir and oseltamivir judiciously – focus use on treatment of persons with suspected or confirmed novel H1N1 influenza who**
 - **are hospitalized, or**
 - **at higher risk for complications due to influenza, such as young children, pregnant women and people with certain chronic medical conditions**

Background

On August 11, 2009 testing at CDC confirmed resistance to oseltamivir (Tamiflu®) in clinical specimens from two immunosuppressed patients with novel influenza A (H1N1) virus infection. Today a *Morbidity and Mortality Weekly Report* (MMWR) Dispatch was published summarizing the case histories and resulting investigations. Both patients were initially infected with oseltamivir-susceptible virus and developed oseltamivir resistance during treatment. Both oseltamivir-resistant viruses were susceptible to zanamivir. These are the second and third instances of oseltamivir resistant novel H1N1 viruses confirmed in U.S. residents. The first of these viruses was isolated in Hong Kong from a resident of San Francisco who had traveled to Hong Kong in June. A total of 11 novel H1N1 influenza viruses that are resistant to the antiviral drug oseltamivir have been reported worldwide. All of the oseltamivir resistant viruses have the same genetic mutation in the neuraminidase gene associated with resistance to oseltamivir (H275Y) but sensitive to zanamivir. All but one of the 11 instances of oseltamivir resistance have occurred in conjunction with oseltamivir exposure either for treatment or prevention. Results from ongoing testing of novel influenza A (H1N1) viruses indicate that oseltamivir resistance remains very rare worldwide.

Resources

- CDC *Morbidity and Mortality Weekly Report*: <http://www.cdc.gov/mmwr>
- CDC Antiviral Recommendations for Novel Influenza A H1N1: <http://www.cdc.gov/h1n1flu/recommendations.htm>
- Public Health Seattle & King County Novel Influenza A H1N1 Page: <http://www.kingcounty.gov/health/h1n1>