



# Public Health Mōno-Gram



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## SEASONAL INFLUENZA – BAD NEWS, GOOD NEWS

As of February 15, 2008

### Summary:

1. The flu season so far has been mild, but the worst is likely to be in the next month – the rest of February and into March.
2. There have been few pediatric deaths so far this year.
3. Co-infections with staph, including MRSA, have been occurring.
4. The vaccine is not a perfect match, but is still advisable, especially for those at high risk of complications such as the elderly.
5. Drug resistance to Tamiflu is showing up among some strains.
6. To prevent flu:
  - a. Get a vaccine – it is not too late
  - b. Wash your hands frequently
7. If you get sick:
  - a. See your doctor, consider antivirals in the first 48 hours
  - b. Cover your cough with your elbow, wash your hands frequently
  - c. Stay home!



## What sort of flu season are we experiencing this year?

Flu seasons are unpredictable in a number of ways. Although epidemics of flu happen every year, the timing of the flu season and its severity depend on many factors, including what influenza viruses are circulating and how well viruses in the vaccine match circulating influenza viruses.

From October 2007 through early January 2008, the United States experienced low levels of flu activity. Beginning in January, influenza activity began increasing. By the week ending February 2, 2008, 31 states were reporting widespread influenza activity, and 17 regional activity, including California. Pediatric deaths have been low, although a previously healthy 11 year old just died in Reno.

## What recommendations are we making about flu this season?

To reduce the substantial burden of influenza on the U.S., we recommend a three-pronged approach:

1. Take time to get a vaccine. Vaccination now can still provide protection against influenza this season since different influenza viruses can circulate as late as May.
2. Take everyday preventive steps like frequent hand washing and covering your cough with your elbow to help keep germs from spreading. Stay home when you are sick.
3. Take antiviral drugs if your doctor says to. Antiviral drugs are an important second line of defense against influenza and they can be used to treat or prevent influenza virus infection.

## What can we expect this season in terms of bacterial co-infections, including *Staphylococcus aureus*, with flu?

Bacterial infections can occur as co-infections with influenza or occur following influenza infection. Last year, CDC noted an increase in flu and *Staphylococcus aureus* (*S. aureus*) co-infections among children who had died or were hospitalized with influenza infection. Some of those infections were with methicillin-resistant *S. aureus* (MRSA).

## Are new strains of influenza circulating so far this season?

Influenza viruses are constantly changing so it's common for new strains of influenza viruses to appear each year. Although influenza A (H1N1) viruses



predominated early in the season, an increasing proportion of influenza viruses subtyped have been influenza A (H3N2) viruses. H3N2 viruses are typically associated with more severe illness. An H3N2 virus called A/Brisbane has been detected among the H3N2 viruses in the U.S. that have been tested this season. A/Brisbane is the virus strain that predominated in Europe and the southern hemisphere during their last flu season. The A/Brisbane strain is related to, but is a “drifted” variant from the A/Wisconsin strain included in the 2007-08 vaccine. It is too early to tell how widely A/Brisbane will circulate in the U.S. or how well this year’s vaccine will protect against this strain. However, previous influenza studies have found that while a less than ideal match between the viruses in the vaccine and circulating viruses can reduce the vaccine’s effectiveness, the vaccine can still protect enough to make illness milder and prevent flu-related complications. Such protection is possible because antibodies made in response to the vaccine can provide some protection (called cross-protection) against different, but related strains of influenza viruses.

### **Will this season’s vaccine be a good match for circulating viruses?**

It’s not possible to predict with certainty which influenza viruses will predominate during a given season or what the severity, timing, or duration of a flu season will be. Influenza viruses are constantly changing (called drift) – they can change from one season to the next or they can even change within the course of one flu season. Experts must pick which viruses to include in the vaccine many months in advance in order for vaccine to be produced and delivered on time. The composition for next year’s vaccine was just announced. Because of these factors, there is always the possibility of a less than optimal match between circulating viruses and the viruses in the vaccine.

As of February 2, 2008, nearly all H1N1 viruses tested to date at CDC were well-matched to the H1N1 vaccine strain. However, most of the H3N2 and B virus strains were different from those contained in the vaccine, suggesting that protection against circulating H3N2 and B virus strains may not be optimal.

A less than ideal match may result in reduced vaccine effectiveness against the variant viruses, but it still can provide enough protection to prevent or lessen illness severity and prevent flu-related complications. In addition, it’s important to remember that the influenza vaccine contains three virus strains so the vaccine can also protect against the other two viruses. For these reasons, even during seasons when there is a less than ideal match, CDC continues to recommend influenza vaccination. This is particularly



important for people at high risk for serious flu complications and their close contacts.

### **How often are the vaccine and circulating virus strains well matched?**

In recent years the match between the vaccine viruses and those identified during the flu season has usually been good. In 16 of the last 19 U.S. influenza seasons, the viruses in the influenza vaccine have been well matched to the predominant circulating viruses. Since 1988, in fact, there has only been one season (1997-98) when there was very low cross-reaction between the viruses in the vaccine and the predominate circulating virus and two seasons (2003-04 and 1992-93) when there was low cross-reaction.

### **What actions can I take to protect myself and my family against the flu this season?**

A flu vaccine is the first and best defense against influenza. However, [antiviral drugs](#) are an important second line of defense against the flu. They can be used to treat the flu or to prevent infection with flu viruses. Treatment with antiviral drugs should begin within 48 hours of getting sick, and can reduce your symptoms and shorten the time you are sick. When used for prevention, antiviral drugs are 70% to 90% effective in preventing infection with influenza viruses. Two FDA-approved influenza antiviral agents are recommended for use in the United States to treat or prevent flu during the 2007-08 influenza season: oseltamivir and zanamivir.

In addition, you can take [everyday preventive steps](#) like frequent hand washing to decrease your chances of getting the flu. If you are sick with flu, reduce your contact with others and cover your cough to help keep germs from spreading.

### **What have we seen so far during the 2007-2008 season in terms of antiviral resistance monitoring or surveillance in the United States?**

CDC laboratory surveillance has indicated continued high resistance among influenza virus isolates to the adamantanes (amantadine and rimantadine) in the United States. As of February 2, 2008, 99% of influenza A (H3N2) viruses and 8.3% of influenza A (H1N1) viruses were resistant to the adamantanes.

In addition, as of February 2, 2008, CDC has detected 8.1% of H1N1 viruses were resistant to the antiviral drug oseltamivir (brand name Tamiflu®). No oseltamivir resistant influenza A (H3N2) or B viruses have



been found in the United States this season and resistance to zanamivir has not been detected. As of February 2, 2008, 4.5% of all influenza viruses analyzed by CDC this season have been found to be resistant to oseltamivir. Of those, 8.1% of H1N1 viruses and 0% of H3N2 viruses have been resistant to the antiviral drug oseltamivir. Because influenza activity in the U.S. is just beginning to increase, relatively few viruses have been studied so far.

