

Influenza is a highly contagious acute respiratory illness that causes substantial morbidity and mortality worldwide each year. In an average season, influenza is associated with 20,000 deaths and 110,000 hospitalizations in the U.S. Periodic pandemics due to new subtypes cause much more illness and death. This health status update describes how we track influenza in Utah, how physicians and other health care providers can assist with that tracking or surveillance effort, and several new medicines available for influenza treatment.

Influenza Surveillance

Influenza surveillance guides vaccine development, detects outbreaks that prompt preventive treatment, and guides treatment decisions in patients with influenza-like clinical illness. The UDOH tracks influenza based on cases of laboratory-confirmed influenza, cases of influenza-like illness reported from sentinel reporting sites, and school absenteeism rates.

Tracking culture-confirmed cases is important for identifying which virus types are circulating. Subtype information also helps guide global vaccine development.

- During the 1998-99 season, 84 culture-confirmed cases were detected, an increase over the previous season (50 cases).
- Influenza A was more common (67 cases), but both type A and type B circulated during 1998-1999. In the 1999-2000 season, 50 cases have been detected through 1/1/2000. Most have been type A, but type B has also been detected.
- During 1998-1999, 3,331 cases of influenza-like illness were reported by 13 sentinel physician's offices, clinics, and university health centers. Cases were reported from October 1998 through March 1999, and peaked during the fourth week of January. During the 1999-2000 season, cases began to be reported in October, and increased substantially in early December.

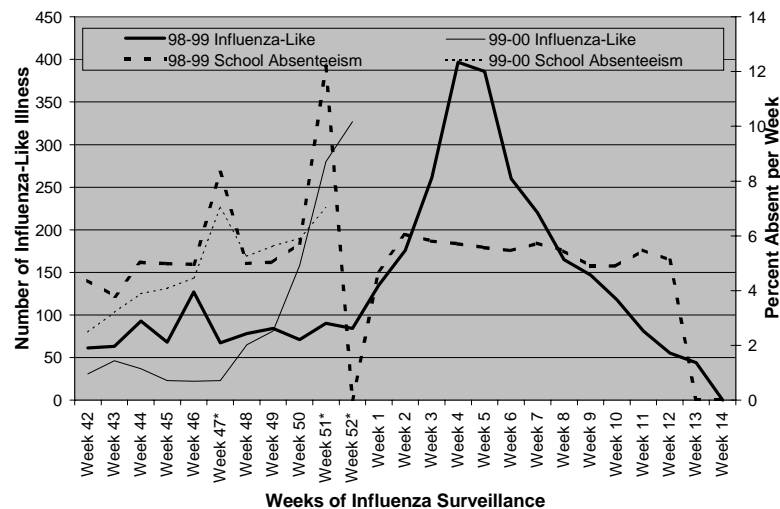
Absenteeism rates are reported by 16 schools and 4 school districts throughout Utah. During 1998-1999, absenteeism rates remained at about 5% throughout the influenza season. As of 12/25/99, absenteeism rates had not increased appreciably. At the time of this update, influenza is considered widespread in Utah. Physicians should consider preventive treatment for unvaccinated high risk patients.

Influenza Immunization

Immunization is the most important way to prevent influenza and its potentially serious complications. Influenza vaccine is effective for preventing both types A and B. Due to both changes in the viruses and decreasing immunity over time, vaccination should be given each season, ideally during October or November. Vaccination is most important for the elderly and those with chronic illness, who experience the most serious complications. In 1997, only 65% of Utahns over age 65 reported they had a flu shot in the past year (Utah BRFSS).

Influenza Cases and Absenteeism

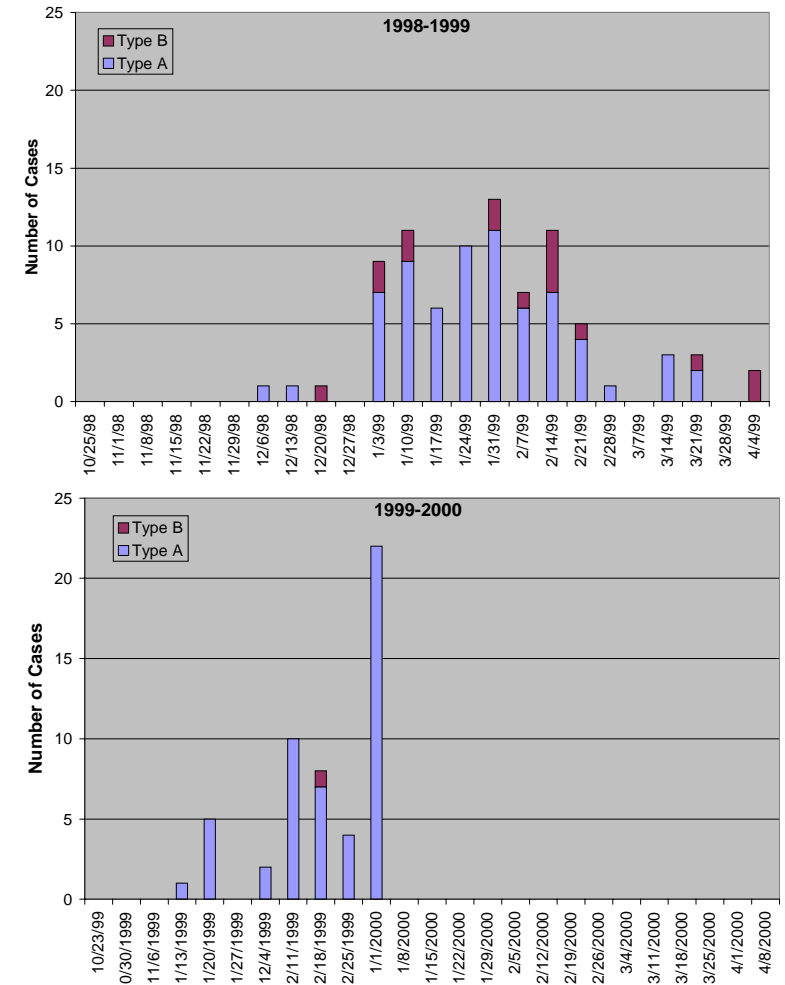
Number of reported influenza-like illness cases and percentage school absenteeism, 1998-1999 season and 1999-2000 season.



* absenteeism rates may be an artifact due to holidays

Influenza Isolate Surveillance

Number of laboratory-confirmed influenza cases reported in 1998-1999 and 1999-2000 seasons, by type.



Antiviral Drugs

Immunization is the best way to prevent influenza and control outbreaks, but antiviral agents also can be used for preven-

tion or treatment. Preventive treatment can be considered during a community outbreak for: unvaccinated persons who frequently contact at risk persons; unvaccinated health care workers; persons vaccinated when an outbreak is underway (immunity usually develops over about two weeks, but can take longer in some, e.g., the elderly); high-risk persons expected to respond poorly to vaccine; and unvaccinated persons due to hypersensitivity to egg proteins.

Rimantadine and amantadine, are highly effective (70-90% in healthy young adults) in preventing influenza A and also reduce severity and duration of type A illness, when started within 48 hrs. of onset. They have no effect on type B and use is limited by neurologic and other side effects, especially with amantadine and in the elderly. Resistance is also a problem.

Two new agents, zanamivir (Relenza) and oseltamivir (Tamiflu), have been approved as treatment for both types A and B; they appear effective but have not yet been approved for preventive use. Both appear to be better tolerated than the older agents, and to have less potential for development of resistant virus strains. Clinical experience especially in patients with other problems is limited and they are more expensive, however.

Drug	Route	Usual Adult Dosage*	Side Effects	Comments
Amantadine	oral	100 mg BID	CNS, GI	Type A only \$1.70**
Rimantadine	oral	100 mg BID	CNS, GI	Type A only \$14.40
Zanamivir (Relenza®)	powder inhalant; 2d of onset	10 mg BID, 5d (age ≥ 12)	Sinusitis, other	Types A or B \$44.00
Oseltamivir (Tamiflu®)	oral; 2 d of onset	75 mg BID, 5d (age ≥ 18)	GI, other	Types A or B \$53.00

* Age specific doses for children and elderly and guidance for use in persons with impaired renal or hepatic function are in MMWR 1999; 48 (RR-04) and MMWR 1999; 48 (RR-14); 1-9 available at: <http://www.cdc.gov/ncidod/diseases/flu/flu.html>

** Average wholesale price for 5 days at usual adult dosage.

Physicians can participate in influenza surveillance by submitting a standard throat culture or washing collected during the first three days of illness and kept cold during transport to the state laboratory. The test is free.

Physicians and others can get current information on flu surveillance in Utah at: <http://hlinux.state.ut.us/els/epidemiology/commdisease/influenza/FluSurv.HTML>.



Annual influenza (flu) shots are recommended for people at high risk of a serious complication if they get the flu. Groups at increased risk include:

- Persons over 65 years of age
- Residents of nursing homes and chronic-care facilities
- Adults and children who have chronic illnesses, such as pulmonary (including children with asthma), cardiovascular, diabetes, renal dysfunction, hemoglobinopathies, or immunosuppression (including that caused by medications).
- Children and teenagers (6 months - 18 years) who are receiving long-term aspirin therapy and, therefore, might be at risk for developing Reye syndrome after the flu.
- Women who will be in the second or third trimester of pregnancy during the flu season.
- Vaccination is also recommended for health care workers and others in close contact with high risk persons, and for people who would perform essential services during an outbreak.

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Additional information about this topic can be obtained from the Bureau of Epidemiology, Utah Department of Health, P. O. Box 142104, Salt Lake City, Utah 84114-2104, (801) 538-6191, FAX (801) 538-9923; or the Office of Public Health Assessment, Utah Department of Health, P. O. Box 142101, Salt Lake City, Utah 84114-2101, (801) 538-6108, FAX (801) 536-0947 or (801) 538-9346, email: phdata@doh.state.ut.us.

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