Center for Acute Disease Epidemiology
Iowa Department of Public Health

Iowa Influenza Surveillance Network (IISN)

2005-2006 Final Report

Summary

Influenza in the 2005-2006 season was very mild compared to the previous two years. At the peak of activity, rates of influenza-like illness (ILI)[1] and school absenteeism were only slightly above baseline. Influenza activity peaked much later than usual (during the weeks ending February 11, 18 and 25) for both sentinel and school/long term care surveillance (Fig. 1). Persons aged 5-24 years were most affected, followed by persons aged 25-64, 0-4, and >64 (Fig. 2). The number of laboratory-confirmed cases and reports of ILI were also tracked by age group.

Several factors may have contributed to the mild influenza season. Iowa's weather during the winter of 2005-2006 was unusually warm. Higher humidity and temperatures can affect the influenza virus's ability to live outside a human host[2]. Warmer weather encourages people to spend more time outdoors, decreasing opportunities for viruses to spread from person to person in close quarters.

Sentinel provider surveillance

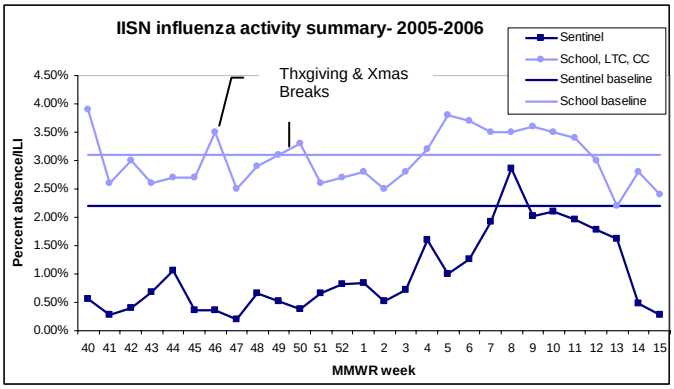

Figure 1

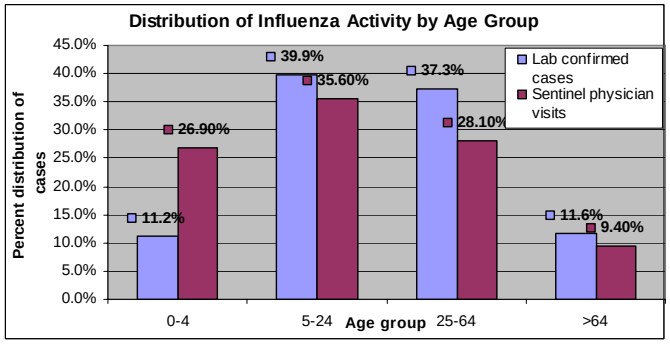

Figure 2

The U.S. Influenza Sentinel Provider Surveillance System is a program sponsored by the Centers for Disease Control and Prevention (CDC), designed to track the percentage of ILI and types and strains of influenza circulating during the regular influenza season and beyond. States participate in the network through a state-based influenza surveillance coordinator. Each state is asked to recruit a minimum of 1 provider for every 250,000 state residents. Participants are asked to track the total number of patients seen each week, and those with ILI by age group. They submit specimens to state and federal laboratories for type and strain determination. The 2005-2006 Iowa Influenza Surveillance Network included 25 health care providers from several specialties, including pediatrics, geriatrics, family medicine, internal medicine, student health services, hospitals and emergency rooms. At least one provider reported from every region of Iowa, and at least one provider reported for every 250,000 people in Iowa[3].

[1] A patient with influenza-like illness has a fever >100°F and a cough and/or sore throat lasting at least 2 days.
[2] Schaffer FL, et al. Survival of airborne influenza virus: effects of propagating host, relative humidity, and composition of spray fluids. Arch Virol. 1976;51(4):263-73.
[3] Iowa has 11 influenza sentinel reporters.

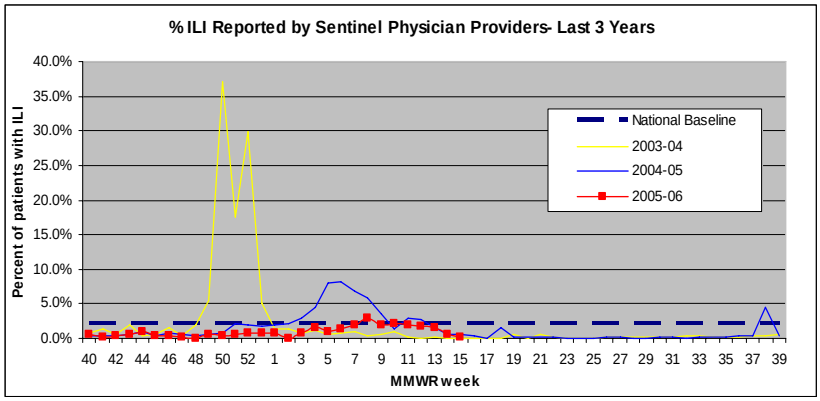

Figure 3

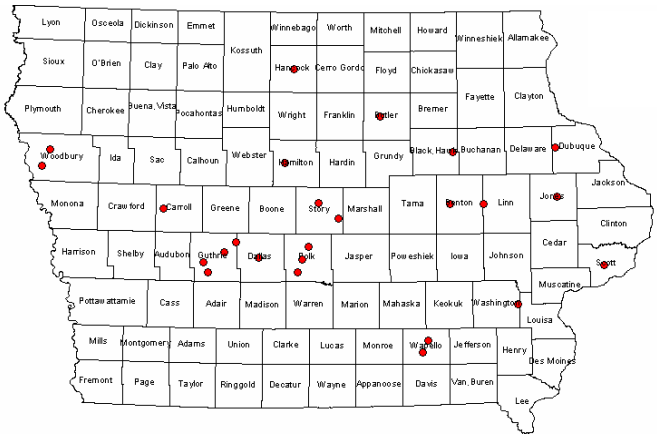

Figure 4 Iowa Sentinel Surveillance Sites

The average number of weekly reports was 15.8. Approximately 110,000 patient visits were reported; of those, 1,014 were patients with ILI. At the peak of the Iowa influenza season, ILI was 2.86% of all health care provider visits, slightly above the national baseline of 2.20% (Fig. 3).

Laboratory surveillance

A total of 502 specimens were sent to the University Hygienic Laboratory (UHL) for influenza testing. The influenza virus was isolated from 157 specimens. The largest proportion of isolates was type A (H3N2) with 141/157 (89.9%). Sixteen of 157 (10.1%) were type B influenza.

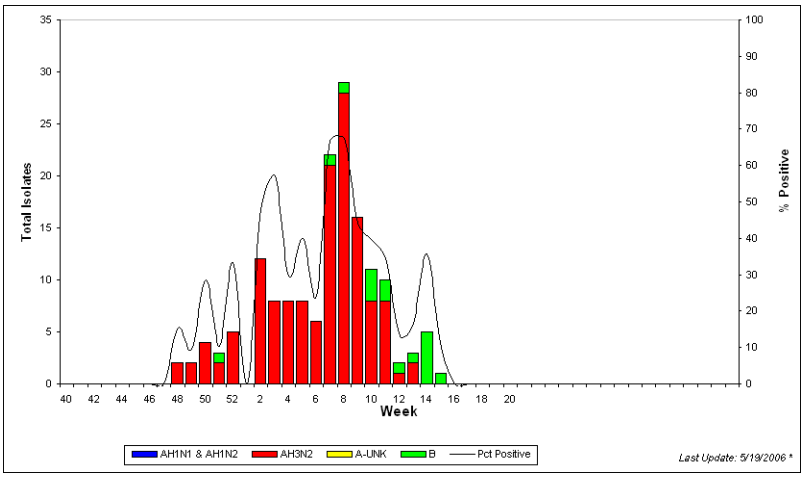

Figure 5

Additional laboratory results were submitted to the Center for Acute Disease Epidemiology (CADE) by laboratories around the state.
The strains isolated by CDC from Iowa were A/California/07/2004-Like(H3N2) and A/New York/55/2004-Like(H3N2). Both strains were included in the vaccine used during the 2005-2006 influenza season.

School, child care and long term care facility surveillance

Influenza surveillance has been part of the IISN for several years. This year the network was expanded to include child

care and long term care facilities. This year was the first time a web-based system was used to report and track IISN data. Participants were asked to track the number of students enrolled or residents in a facility, and the number absent due to illness or affected by influenza-like illness. Forty-four schools, 2 long term care facilities and 2 child care centers were enrolled in the network. This network was sensitive in detecting the initial increase in influenza activity, though school and child care center reporting data may be slightly affected by the presence of other seasonal diseases[4]. School, long term care facility and child care center rates peaked in approximately week 6, slightly earlier than the sentinel surveillance sites but still coordinated with the sentinel surveillance peak.

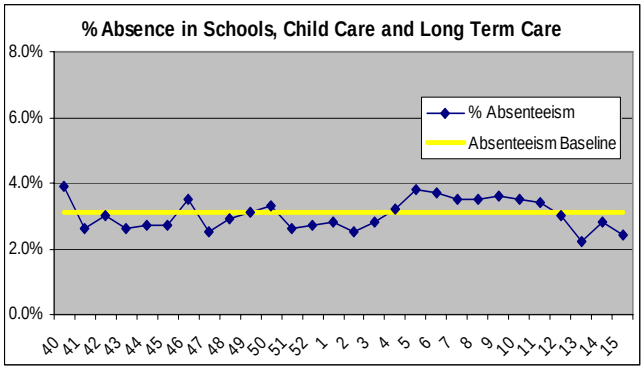

Figure 6

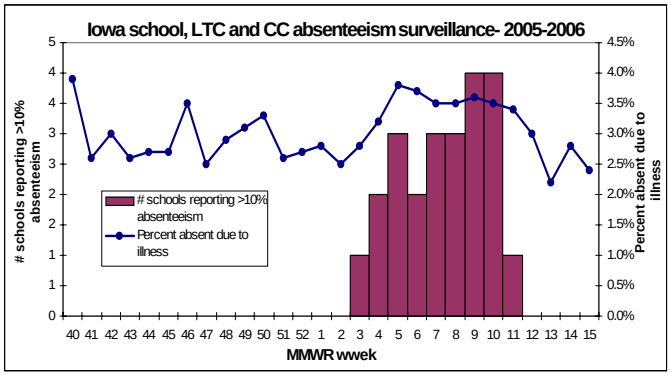

Figure 7

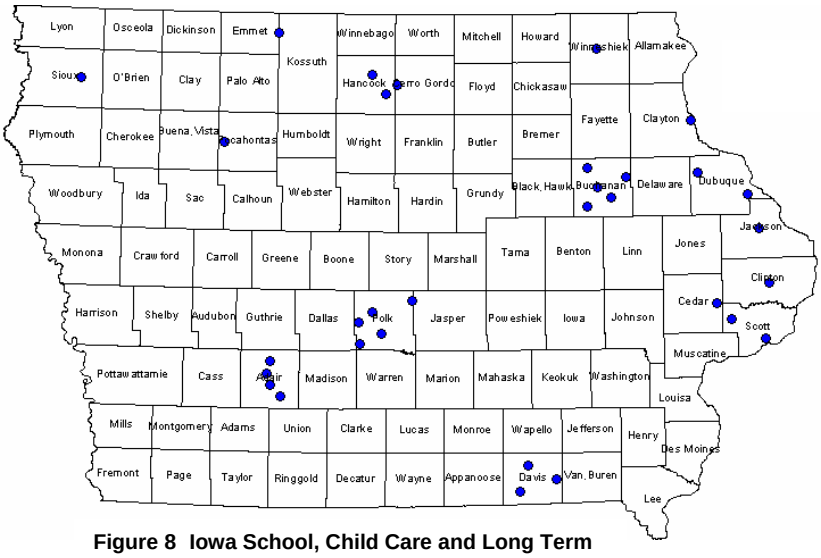

Figure 8 Iowa School, Child Care and Long Term Care Facility Surveillance Sites

[4] Examples include adenovirus, pertussis, mumps and RSV.