



INFLUENZA SURVEILLANCE PROGRAM
2004-2005 INFLUENZA SURVEILLANCE SEASON
WASHOE DISTRICT HEALTH DEPARTMENT

Date: June 2, 2004

To: Barbara Hunt, District Health Officer
 Debra Brus, Acting Epi Center Director
 Participating Health Care Providers
 Randy Todd, Nevada State Health Division
 Dr. Brown, Medical Director, Nevada State Public Health Laboratory

From: Denise Stokich, Community Health Epidemiologist

Subject: Summary of 2004-2005 Influenza Surveillance Program

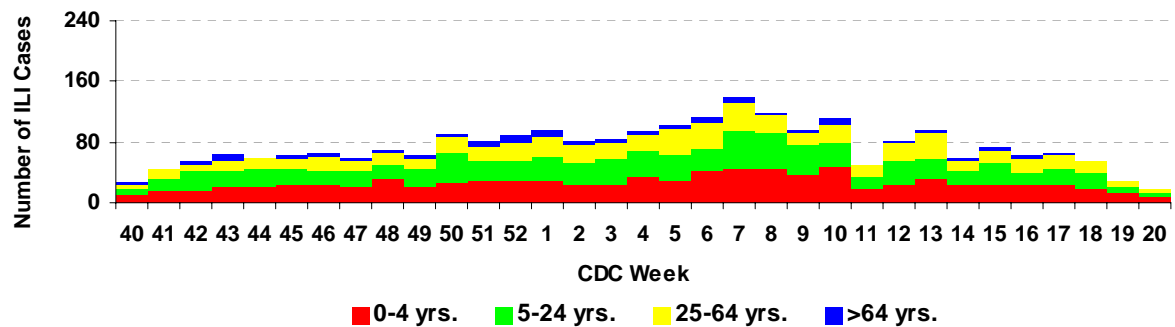
The Program: The 2004-2005 influenza surveillance program was conducted between October 3, 2004 and May 21, 2005. Six local health care providers sent weekly fax reports of the numbers of persons seen with a fever of $\geq 100^{\circ}$ F AND cough and/or sore throat in the absence of a KNOWN cause other than influenza.

The Participants: The health care providers participating in the program were:

- Family Medicine Associates, Ltd.
- Jay S. Schroeder MD, Ltd.
- Northern Nevada Medical Center Emergency Department
- Saint Mary's Regional Medical Center Emergency Department
- Washoe Medical Center Emergency Department
- UNR Student Health Services

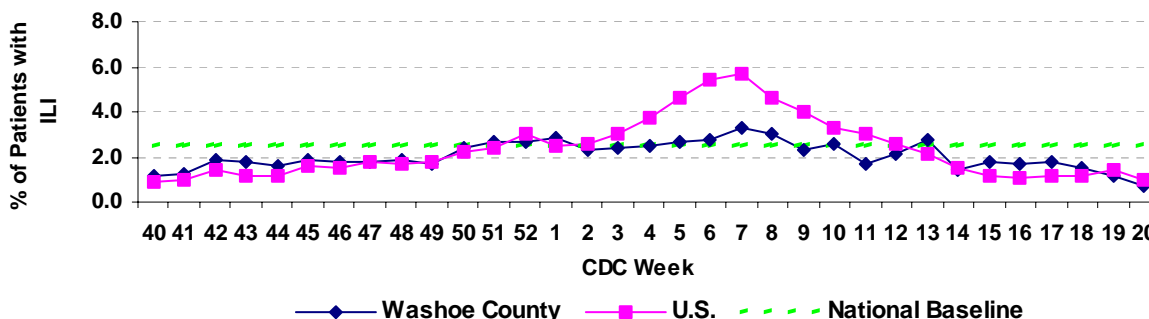
Level of Influenza Activity: The following graph illustrates the proportion of ILI cases by age group and week. Influenza activity in the ≥ 65 -year age group was consistently low through out the season. This age group is the main target for influenza immunization. These data suggest the vaccination program was successful at lowering influenza illness in the targeted age group.

Number of ILI Cases by Week and Age Group Reported by Sentinel Providers, Washoe County Influenza Surveillance, 2004 – 2005.



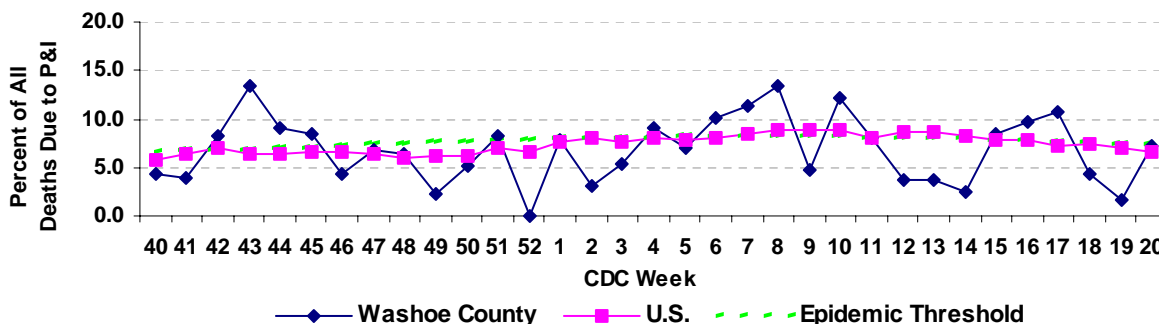
The percentage of overall patient visits for ILI in Washoe County peaked at 3.3% during the week ending February 19, 2005 (week 7). Nationally, this percentage peaked at 5.7% during the same week.

Proportion of Patients Seen with ILI by Sentinel Physicians, Washoe County Influenza Surveillance, 2004 – 2005.



The proportion of deaths due to pneumonia and influenza (P & I ratio) peaked at 13.4% during the week ending February 26, 2005 (week 8) in Washoe County. The P & I ratio as reported by the vital statistics offices of 122 U.S. cities peaked at 8.9% during the weeks ending March 5 and 12, 2005 (weeks 9 and 10).

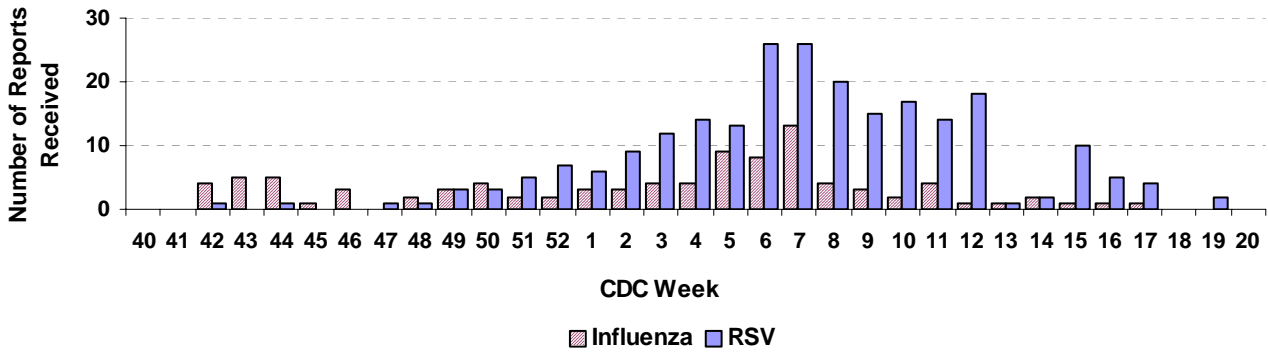
Pneumonia and Influenza Mortality, Washoe County Influenza Surveillance, 2004 – 2005.



Testing:

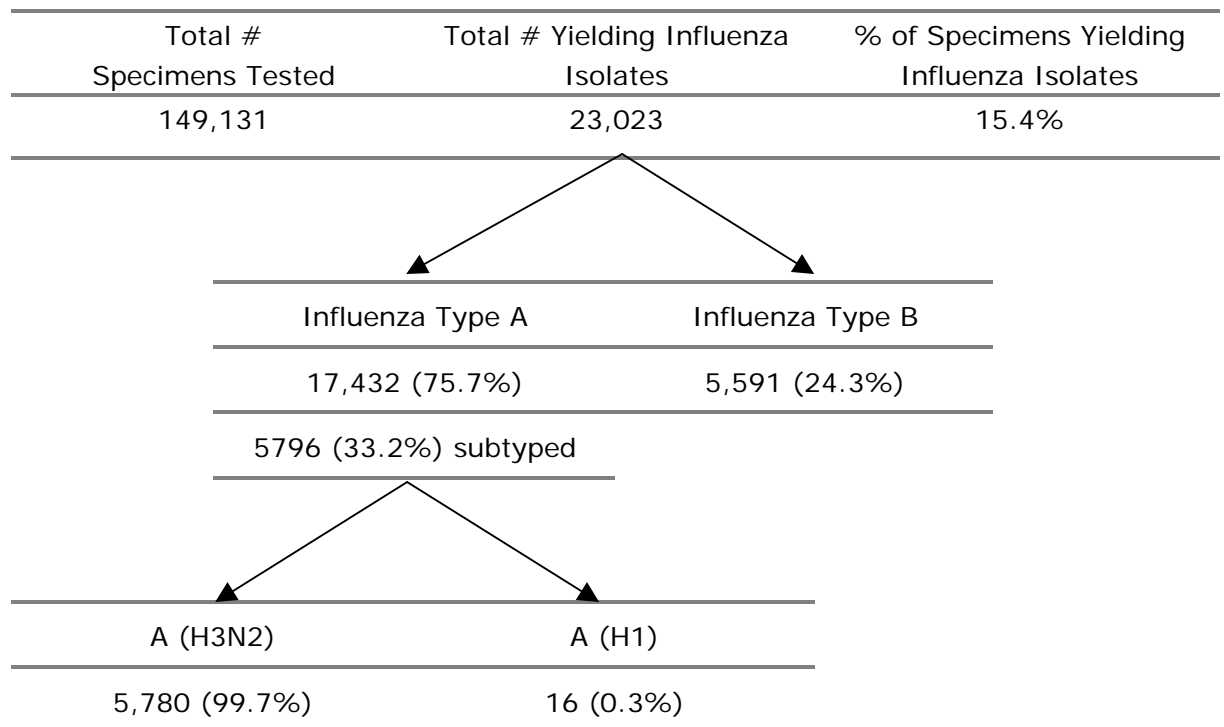
Family Medicine Associates, Jay S. Schroeder M.D., Ltd., and UNR Student Health Services were given culture media to test patients who fit the criteria for influenza-like illness (ILI). The hospital providers did not participate in the testing component of the surveillance. Twenty (43%) of forty-seven specimens submitted for viral testing to the Nevada State Public Health Laboratory (NSPHL) yielded influenza isolates. Fifteen (75%) of the twenty isolates were identified as influenza type A (14 were subtyped as H3N2, 1 was still pending at the time of this report). The remaining five isolates (25%) were identified as influenza type B (one isolate was from an out of jurisdiction case and is not included in the case count for Washoe County). A total of 95 laboratory-confirmed cases of influenza were reported in Washoe County during the 2004-2005 surveillance season. Twenty-six (27%) of the 95 cases were identified as influenza type A (16 cultures, 10 rapid antigen tests). Fourteen of the 16 influenza type A cultures were subtyped as H3N2. Eleven (12%) of the 95 cases were identified as influenza type B (6 cultures, 5 rapid antigen tests). The remaining 58 cases (61%) were laboratory-confirmed by a type of rapid test which does not differentiate between influenza type A or B. Antigenic characterization results were not available at the time of this report. The earliest confirmed isolate was from a specimen collected by a Washoe County medical facility on October 20, 2004. It was a rapid flu test positive for influenza type A antigen.

Influenza and RSV Lab Reports, Washoe County Communicable Disease Surveillance, 2004 – 2005.



The percentage of specimens positive for influenza, a key indicator of the level of influenza activity, peaked at 27.5% during the week ending February 5, 2005 (week 5). Nationally, the predominant influenza strain circulating this season was influenza type A (H3N2). Seventy-six percent of isolates reported nationally were influenza type A and 24% were influenza type B.

Results of testing performed in the United States by the World Health Organization (WHO) and the National Respiratory and Enteric Virus Surveillance System (NREVSS) laboratories between October 3, 2004 and May 21, 2005 are displayed in the following chart:



CDC antigenically characterized 920 influenza virus isolates received from U.S. laboratories between October 1, 2004 and May 21, 2005:

- ◆ 646 influenza type A (H3N2) viruses,
- ◆ 9 influenza type A (H1) viruses,
- ◆ and 265 influenza type B viruses.

The hemagglutinin proteins of the influenza type A(H1) viruses were similar antigenically to the hemagglutinin of the vaccine strain A/New Caledonia/20/99. One hundred fifty-six (24%) of the 646 influenza type A(H3N2) isolates were characterized as antigenically similar to A/Wyoming/3/2003, which is the A/Fujian/411/2002-like (H3N2) component of the 2004-05 influenza vaccine, and 490 (76%) were characterized as A/California/7/2004-like. One hundred seventy-four of the influenza type B viruses isolated this season belong to the B/Yamagata lineage and were characterized as B/Shanghai/361/2002-like, which is the influenza type B component recommended for the 2004-05 influenza vaccine, and 33 showed somewhat reduced titers to ferret antisera produced against B/Shanghai/361/2002. Fifty-eight influenza type B viruses belong to the B/Victoria lineage.

Influenza type B viruses currently circulating can be divided into two antigenically and genetically distinct lineages represented by B/Yamagata/16/88 and B/Victoria/2/87 viruses. B/Yamagata lineage viruses circulated widely between 1990 and 2001, during which time B/Victoria-like viruses were not identified outside of Asia. However, between March 2001 and October 2003, B/Victoria-like viruses predominated in many countries, including the United States, and the vaccine strains were changed accordingly. While both Victoria lineage and Yamagata lineage viruses have been reported worldwide during the past year, Yamagata lineage viruses have once again become predominant.

Conclusions: Influenza activity in the United States during the 2004-2005 season increased steadily in January, peaked in February, and then declined nationwide. Washoe County experienced a similar pattern of influenza activity with the increase in activity beginning in December and overall activity mild compared to the 2003-2004 season.

The Food and Drug Administration's Vaccines and Related Biological Products Advisory Committee has recommended that the 2005-06 trivalent influenza vaccine for the United States contain A/New Caledonia/20/99-like (H1N1), A/California/7/2004-like (H3N2), and B/Shanghai/361/2002-like viruses. The influenza type A (H3N2) component has been changed from the 2004-05 season vaccine component. This recommendation was based on antigenic analyses of recently isolated influenza viruses, epidemiologic data, and post-vaccination serologic studies in humans.

The District Health Department would like to thank the Vital Statistics program staff, the participating health care providers, and the Nevada State Public Health Laboratory for their support and cooperation. Together, we have been able to provide physicians and the general public with important information about influenza activity in our community.
