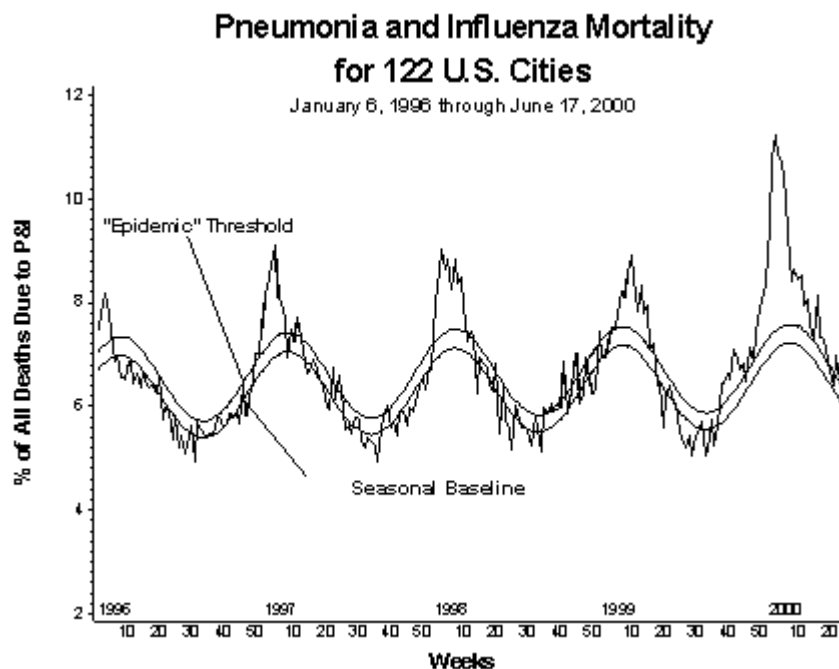


1999-2000 INFLUENZA SEASON SUMMARY*

Synopsis: During the 1999-2000 season, influenza type A(H3N2) was the predominant strain circulating in the United States. Influenza activity (virus isolation, morbidity and mortality) peaked between mid-December and mid-January. The percentage of respiratory specimens testing positive for influenza viruses peaked at 33% during mid to late December. During the previous 3 influenza seasons (1996-97, 1997-98, and 1998-99), the peak percentages of respiratory specimens testing positive for influenza viruses ranged from 28% to 34%. The percentage of overall patient visits for influenza-like illness (ILI) during the 1999-2000 season peaked at 6% in late December and the proportion of deaths attributed to pneumonia and influenza (P&I) peaked at 11.2% in mid-January. During the previous 3 influenza seasons, the peak percentages of patient visits for ILI ranged between 5% and 7% and peak P&I mortality levels ranged between 8.8% and 9.1%. This season's P&I figures must be interpreted with caution because important changes have taken place in the case definition that may be contributing to higher estimates of P&I mortality than in previous years.

Pneumonia and Influenza Mortality: The percentage of P&I deaths exceeded the epidemic threshold for 31 of 33 weeks during the 1999-2000 influenza season and peaked at 11.2% during mid-January. Whether the higher-than-expected percentage of P&I deaths was due to influenza activity, respiratory illness due to some other pathogen, or reporting changes in the 122 Cities Mortality Reporting System is unknown. Because of changes in the reporting case definition that occurred just prior to the start of the 1999-2000 season, the current increase in P&I mortality should be interpreted with caution.



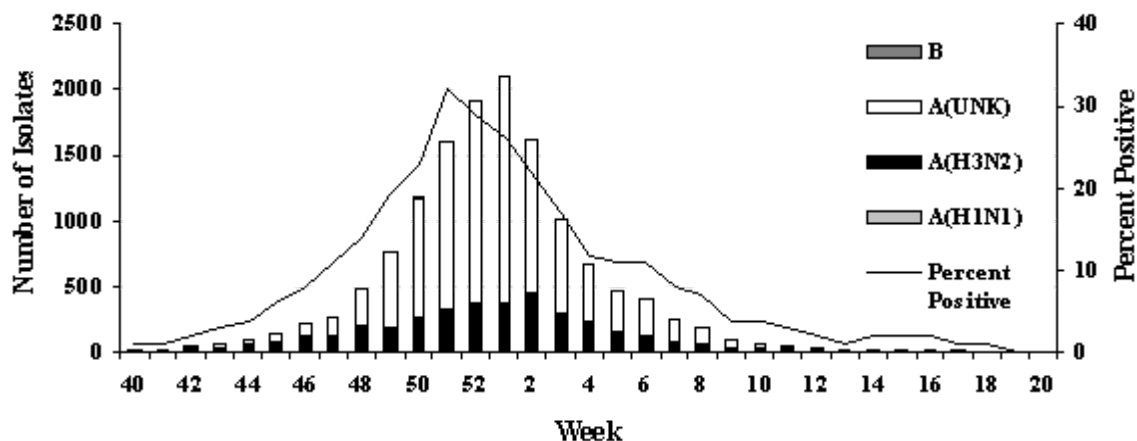
U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) Collaborating Laboratory Reports:*

From October 1999 through May 2000, WHO and NREVSS laboratories tested 92,403 respiratory specimens for influenza and 13,773 (15%) were positive by viral isolation or antigen testing. Of the positive results, 13,696 (99.4%) were influenza type A and 77 (0.6%) were influenza type B. Of the 13,696 influenza A viruses, 3,772 (28%) were subtyped; 3,640 (97%) were A(H3N2) and 132 (3%) were A(H1N1). Influenza A(H1N1) viruses were reported by WHO and NREVSS laboratories from all regions. Of the 132 influenza A(H1N1) viruses reported, 118 (89%) were identified between February and May.

WHO and NREVSS laboratory data suggest that influenza activity peaked during late December in most of the country (New England, Mid-Atlantic, East North Central, West North Central, West South Central, Mountain, and Pacific regions). However, in the South Atlantic and East South Central regions, influenza activity peaked during mid to late January. (See Appendix I for a listing of the regions and Appendix II for regional graphs.)

WHO/NREVSS Collaborating Laboratories

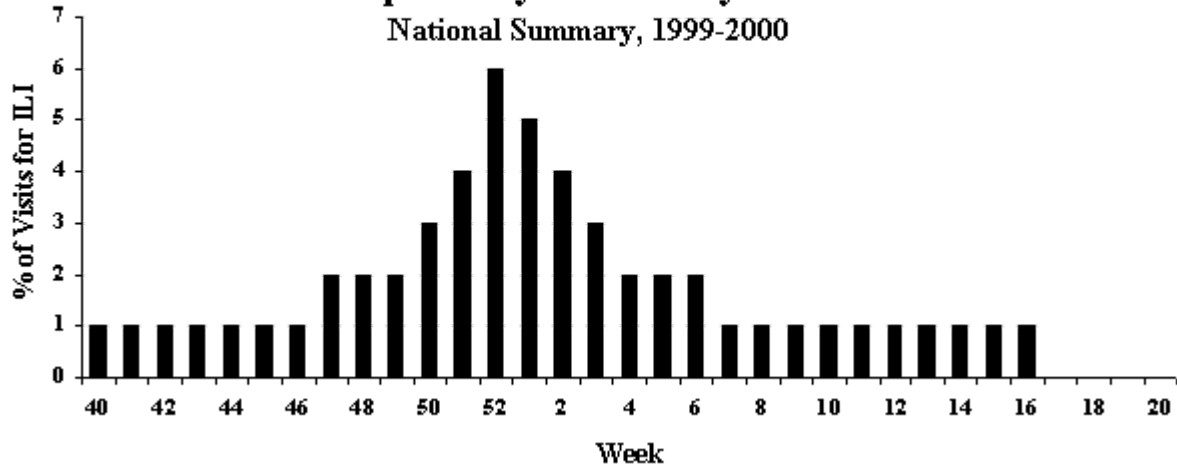
National Summary, 1999-2000



Region	% A	% B	Of Those Type A Viruses Subtyped	
			% A(H3N2)	% A(H1N1)
New England	99.5	0.5	99.5	0.5
Mid-Atlantic	99.5	0.5	95.6	4.4
East North Central	99.6	0.4	97.3	2.7
West North Central	99.7	0.3	98.9	1.1
South Atlantic	99.6	0.4	96.3	3.7
East South Central	98.9	1.1	87.1	12.9
West South Central	99.4	0.6	98.6	1.4
Mountain	98.8	1.2	93.5	6.5
Pacific	99.0	1.0	91.3	8.7
All Regions	99.4	0.6	96.5	3.5

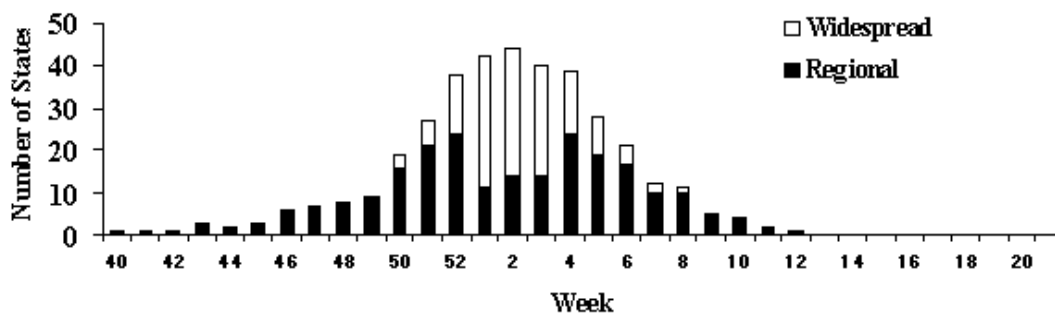
Influenza Morbidity Reports from U.S. Sentinel Physicians: Nationally, influenza morbidity as reported by U.S. sentinel physicians peaked during the end of December, when 6% of the total patient visits were due to ILI. These data suggest that influenza activity peaked during late December or early January in the Mid-Atlantic, South Atlantic, East South Central, East North Central, West North Central, West South Central, Mountain, and Pacific regions. Influenza activity in the New England region peaked during mid-January. (See Appendix II for regional graphs.)

**Percentage of Visits for Influenza-like Illness
Reported by Sentinel Physicians
National Summary, 1999-2000**



Influenza Activity as Assessed by State and Territorial Epidemiologists:** Peak influenza activity occurred during mid-January when 44 states reported either regional or widespread influenza activity.

**Weekly Assessment of Influenza Activity
by State and Territorial Epidemiologists, 1999-2000**



Antigenic Characterization of Viral Isolates: CDC antigenically characterized 617 influenza viruses received from U.S. laboratories between October 1999 and May 2000. Of the 507 influenza A(H3N2) viruses tested, 492 (97%) were similar to the 1999-2000 vaccine strain A/Sydney/05/97. All 29 of the influenza B viruses antigenically characterized were similar to B/Beijing/184/93, which was represented in the 1999-2000 vaccine by B/Yamanashi/166/98. Of the 81 influenza A(H1N1) viruses antigenically characterized, 1 (1%) was similar to A/Beijing/262/95, the H1N1 component of the 1999-2000 vaccine, 26 (32%) were similar to A/Bayern/07/95, and 54 (67%) were more closely related to the antigenic variant A/New Caledonia/20/99. A/Bayern/07/95-like viruses are antigenically distinct from the A/Beijing/262/95-like viruses; however, the A/Beijing/262/95 vaccine strain produces high titers of antibody that cross-react with A/Bayern/07/95-like viruses.

Influenza Strains Contained in the 2000-2001 Vaccine: The trivalent influenza vaccine prepared for the 2000-2001 season will include A/New Caledonia/20/99-like (H1N1), A/Moscow/10/99-like (H3N2), and

B/Beijing/184/93-like antigens. For the A/Moscow/10/99-like (H3N2) antigen, U.S. manufacturers will use the antigenically equivalent A/Panama/2007/99 (H3N2) virus and for the B/Beijing/184/93-like antigen, they will use the antigenically equivalent B/Yamanashi/166/98 virus; these viruses will be used because of their growth properties and because they are representative of currently circulating A(H3N2) and B viruses.

*Reporting is incomplete, so numbers may change as more reports are received.

**Influenza activity is defined as influenza-like illness (fever 100F and a cough or a sore throat) and/or culture-confirmed influenza.

Appendix I: Regions

New England: Connecticut, Maine, Massachusetts, New Hampshire, Vermont, Rhode Island

Mid-Atlantic: New Jersey, New York City, Pennsylvania, Upstate New York

East North Central: Illinois, Indiana, Michigan, Ohio, Wisconsin

West North Central: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota

South Atlantic: Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, Washington, D.C., West Virginia

East South Central: Alabama, Kentucky, Mississippi, Tennessee

West South Central: Arkansas, Louisiana, Oklahoma, Texas

Mountain: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming

Pacific: Alaska, California, Hawaii, Oregon, Washington

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**National Center for Infectious Diseases
Centers for Disease Control and Prevention
Atlanta, GA**

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