Epidemiology and Response Division

NEW MEXICO INFLUENZA SURVEILLANCE UPDATE
2007-2008 Influenza Season

Epidemiology and Response Division, New Mexico Department of Health (NMDOH)

Week Ending	Activity Level
2/2/08 (MMWR Week 5)	Widespread

NMDOH reported the state influenza activity as **"Widespread"** to the Centers for Disease Control and Prevention (CDC). See the table on page 4 for full definitions of activity levels.

Summary of Influenza Activity in New Mexico for Week Ending 2/2/08[1]:

- Twenty-three of the 25 sentinel provider sites reported a total of 8,706 patient visits, of which 399 (4.6%) were positive for an influenza-like illness (ILI)[2]. The previous week ending January 26th reported 4% influenza-like illness.

Summary of Sentinel Laboratory Activity in New Mexico:

Period of 2007-2008 Influenza Season	Number of Tests Performed**	Positive Type A (n,%)	Positive Type B (n,%)	Positive Type Unknown[3] (n,%)	Total Positive All Types (n,%)
Week ending 2/2/08 (29 of 31 labs reporting)	1308	126 (9.6%)	102 (7.8%)	22 (1.7%)	250 (19.1%)
Cumulative as of 10/1/07	7221	444 (6.2%)	290 (4.0%)	105 (1.6%)	839 (11.6%)

**Includes rapid antigen and immunofluorescence testing (i.e., direct fluorescent antibody staining)
Note: The sensitivity and specificity of point of care rapid diagnostic tests vary during times when influenza is not circulating widely. The NM Influenza Surveillance Program expects some false positive rapid diagnostic results outside the time of peak influenza activity (i.e., beginning and end of season). The first NM laboratory confirmed case of the influenza season is based on a positive **viral culture** result.

Influenza-Related Pediatric Mortality:

One pediatric death has been officially reported to CDC this season. NM has had no influenza-related pediatric deaths reported this season.

Influenza Activity, Mountain Region and Bordering States, Week Ending 2/2/08:

State	Activity Level	State	Activity Level
Montana	Regional	Arizona	Widespread
Idaho	Widespread	Utah	Regional
Wyoming	Regional	Nevada	Regional
Colorado	Widespread	Texas	Widespread
New Mexico	Widespread	Oklahoma	Widespread

[1] Weekly ILI and lab data may change as additional reports are compiled.

[2] Influenza-like Activity (ILI) is defined as Fever (≥ 100°F [37.8° C], oral or equivalent) AND cough and/or sore throat in absence of a KNOWN cause other than influenza.

[3] Some rapid influenza tests cannot differentiate between types A and B.

National Flu Surveillance and Laboratory Activity, Week Ending 2/2/08:
Nationwide, for the week ending 2/2/08, 5.1% of patient visits to U.S. sentinel providers were due to ILI, which is above the national baseline of 2.2%. Influenza activity was reported as "Widespread" by 31states, "Regional" by 17 states, and "Local" by 2 states and the District of Columbia. More information on national surveillance can be found at: http://www.cdc.gov/flu/weekly/.
During this same week, the World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) laboratories reported 6,430 specimens tested for influenza viruses; 1,538 (23.9%) of which were positive: 81 influenza A/H1, 248 influenza A/H3 viruses, 916 influenza A viruses that were not subtyped, and 293 influenza B viruses.

Antigenic Characterization:
CDC has antigenically characterized 197 influenza viruses [101 influenza A (H1), 53 influenza A (H3) and 43 influenza B viruses] collected by U.S. laboratories since September 30, 2007.

Influenza A (H1) [**101**]

- Ninety-seven (96%) of the 101 viruses were characterized as A/Solomon Islands/3/2006, the influenza A (H1) component of the 2007-08 influenza vaccine for the Northern Hemisphere and the 2008 influenza A (H1) component for the Southern Hemisphere.
- Four (4%) of the 101 viruses showed somewhat reduced titers with antisera produced against A/Solomon Islands/3/2006.

Influenza A (H3) [**53**]

- Six viruses (11%) were characterized as A/Wisconsin/67/2005-like, the influenza A (H3) component of the 2007-08 influenza vaccine.
- Forty-six (87%) viruses were characterized as A/Brisbane/10/2007-like. A/Brisbane/10/2007 is a recent antigenic variant which evolved from A/Wisconsin/67/2005-like. A/Brisbane/10/2007-like virus is the recommended influenza A (H3) component for the 2008 Southern Hemisphere vaccine.
- One (2%) virus showed somewhat reduced titers with antisera produced against A/Wisconsin/67/2005 and A/Brisbane/10/2007.

Influenza B [**43**] (B/Victoria/02/87 and B/Yamagata/16/88 lineages)
Victoria lineage **[3]**

- Three (7%) of the 43 influenza B viruses belong to the B/Victoria lineage.
  - Two viruses (67%) were characterized as B/Ohio/01/2005-like. The recommended influenza B component for the 2007-08 influenza vaccine is a B/Malaysia/2506/2004-like virus, belonging to the B/Victoria lineage. B/Ohio/01/2005 is a recent B/Malaysia/2506/2004-like reference strain.
  - One virus (33%) showed somewhat reduced titers with antisera produced against B/Ohio/01/2005 and B/Malaysia/2506/2004.

Yamagata lineage **[40]**

- Forty (93%) of the influenza B viruses were identified as belonging to the B/Yamagata lineage.

CDC Update on Antiviral Resistance:

In the United States, two groups of antiviral drugs have been approved by the FDA for use in treating or preventing influenza infections. These two groups of antiviral drugs are: neuraminidase inhibitors (oseltamivir and zanamavir) and adamantanes (amantadine and rimantidine). A description of these drugs can be found at: http://www.cdc.gov/flu/protect/antiviral/index.htm.

Neuraminidase Inhibitor Antiviral Drugs: Small numbers of influenza viruses resistant to the neuraminidase inhibitor oseltamivir have been detected in the United States. Of the 331 influenza A and B viruses tested for antiviral resistance so far this season, 15 (4.5%) have been found to be resistant to oseltamivir. Currently all of the resistant viruses are H1N1 viruses, with 15 (8.1%) of all H1N1 viruses exhibiting a genetic mutation that confers oseltamivir resistance. These resistant viruses have been found sporadically across 4 of the 9 surveillance regions. All tested viruses retain their sensitivity to zanamavir. Additional information on antiviral resistance can be found at: http://www.cdc.gov/flu/about/qa/antiviralresistance.htm

Adamantane Antiviral Drugs: Resistance to the adamantanes continues to be high. Among 189 influenza A viruses tested, 84 (44.4%) are resistant to adamantanes, including 99% of H3N2 viruses and 8.3% of H1N1 viruses. The adamantanes are not effective against influenza B viruses.

Based on the level of oseltamivir resistance observed in only one influenza subtype, H1N1, and persisting high levels of resistance to the adamantanes in both H3N2 and H1N1 viruses, ***CDC continues to recommend the use of oseltamivir and zanamavir for the treatment or prevention of influenza. Use of amantadine or rimantadine is not recommended***. Guidance on influenza antiviral use can be found at:

http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5606a1.htm

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This information is collected by the Infectious Disease Epidemiology Bureau, Epidemiology Response Division of NMDOH. For questions, please call 505-827-0006.

For Border influenza activity (southern New Mexico and the Juarez, Chihuahua, Mexico areas), please refer to the NM/Mexico Border Influenza Surveillance Report at: http://www.health.state.nm.us/flu/ under Border Surveillance Reports.

For more information on influenza go to the NMDOH web page: http://www.health.state.nm.us/flu/ or the CDC web page: http://www.cdc.gov/ncidod/diseases/flu/fluvirus.htm

Activity Level	ILI activity*/Outbreaks		Laboratory data
No activity	Low	**And**	No lab confirmed cases[†]
Sporadic	Not increased	**And**	Isolated lab-confirmed cases
	OR		
	Not increased	**And**	Lab confirmed outbreak in one institution[‡]
Local	Increased ILI in 1 region**; ILI activity in other regions is not increased	**And**	Recent (within the past 3 weeks) lab evidence of influenza in region with increased ILI
	OR		
	2 or more institutional outbreaks (ILI or lab confirmed) in 1 region; ILI activity in other regions is not increased	**And**	Recent (within the past 3 weeks) lab evidence of influenza in region with the outbreaks; virus activity is no greater than sporadic in other regions
Regional (doesn't apply to states with ≤4 regions)	Increased ILI in ≥2 but less than half of the regions	**And**	Recent (within the past 3 weeks) lab confirmed influenza in the affected regions
	OR		
	Institutional outbreaks (ILI or lab confirmed) in ≥2 and less than half of the regions	**And**	Recent (within the past 3 weeks) lab confirmed influenza in the affected regions
Widespread	Increased ILI and/or institutional outbreaks (ILI or lab confirmed) in at least half of the regions	**And**	Recent (within the past 3 weeks) lab confirmed influenza in the state.

*Influenza-like illness: Fever (≥ 100°F [37.8°C], oral or equivalent) and cough and/or sore throat (in the absence of a known cause other than influenza)

[†] Lab confirmed case = case confirmed by rapid diagnostic test, antigen detection, culture, or PCR. Care should be given when relying on results of point of care rapid diagnostic test kits during times when influenza is not circulating widely. The sensitivity and specificity of these tests vary and the predicative value positive may be low outside the time of peak influenza activity. Therefore, a state may wish to obtain laboratory confirmation of influenza by testing methods other than point of care rapid tests for reporting the first laboratory confirmed case of influenza of the season.

[‡] Institution includes nursing home, hospital, prison, school, etc.

**Region: population under surveillance in a defined geographical subdivision of a state. A region could be comprised of 1 or more counties and would be based on each state's specific circumstances. Depending on the size of the state, the number of regions could range from 2 to approximately 12. The definition of regions would be left to the state but existing state health districts could be used in many states. Allowing states to define regions would avoid somewhat arbitrary county lines and allow states to make divisions that make sense based on geographic population clusters. Focusing on regions larger than counties would also improve the likelihood that data needed for estimating activity would be available.

Influenza Surveillance Graphs— 2007-2008 Season: