Note

This is the last scheduled influenza surveillance report of the 2009-2010 influenza surveillance season. A final summary report for the season will be released in May of 2010.

Although enhanced influenza surveillance, including investigation of hospitalizations and deaths, has concluded, the health district will continue to conduct enhanced pediatric laboratory surveillance for influenza throughout the year. In addition laboratory-confirmed cases are reportable to the health district throughout the year.

Given the low levels of circulating influenza viruses, the predictive value of rapid tests has fallen to levels where positive rapid tests will no longer be counted in official statistics as cases of influenza. Physicians are encouraged not to order rapid tests as part of diagnostic workups until influenza viruses circulate more widely in the community, as is typically seen in the winter months.

Summary

Through the week ending April 3, 2010:

- Influenza activity in Southern Nevada remains at the low levels seen at the beginning of influenza surveillance season in September.
- There is currently no evidence of increased severity of disease in Southern Nevada or in the United States.
- National laboratory surveillance indicates that nearly all reported cases of influenza are the result of 2009 Influenza A (H1N1)
- One death was reported in a 10-year-old male with underlying health conditions

Current Status

Circulation

Influenza activity continues in Southern Nevada at levels well below the season-to-date peak seen in October and November. Since the beginning of 2010, national laboratory testing has been showing consistently low numbers of specimens submitted and low positivity rates (Figure 1.1 and Table 1.1) Local laboratory-based surveillance has identified only one case of H1N1 since mid-December. Sentinel provider reports of patients seeking care for influenza-like illness have decreased to less than one percent since the peak in mid-October. (Figure 2.1). Although reports of hospitalizations for influenza are still being received, the reports have been sporadic since late January (Figure 3.4 and Table 3.1).

Severity

There is currently no evidence of increased severity of disease in Southern Nevada or in the United States. One death was reported in Clark County for the week ending April 3, 2010, in a 10-year-old male with underlying health conditions who had been hospitalized since February.

Circulating Strains

Local and national laboratory surveillance indicates that nearly all reported cases of influenza are the result of 2009 Influenza A (H1N1). Local pediatric laboratory surveillance has identified no seasonal influenza A H1 or H3 infections and only one influenza B infection out of 369 samples tested since the beginning of influenza season (Figure 1.1 and Table 1.1). This is consistent with national surveillance (Figure 1.2 and Table 1.2).

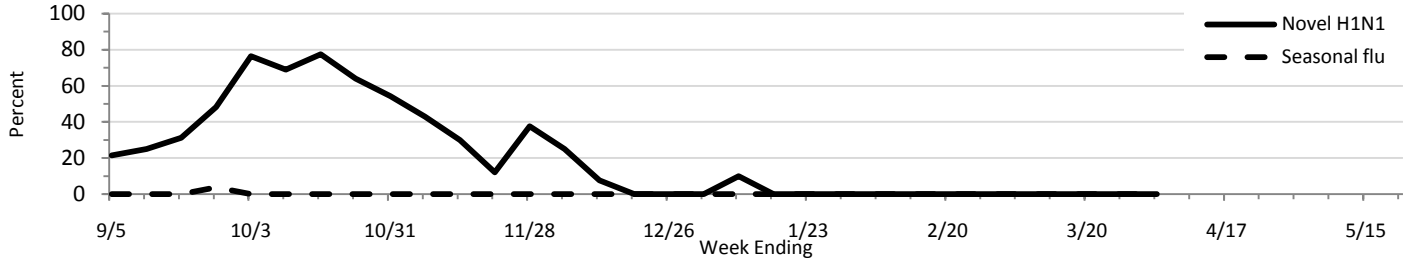
Antiviral Resistance

The circulating strain of 2009 Influenza A (H1N1) continues to display sensitivity to oseltamivir and zanamivir and resistance to adamantanes. Although sporadic cases of oseltamivir-resistance have been identified in the United States, nearly all patients had documented treatment or prophylaxis with oseltamivir, and occasional development of oseltamivir resistance during treatment or prophylaxis is not unexpected. Since April of 2009, a total of 64 cases of oseltamivir-resistance have been identified in the United States. Fifty-two of these patients had documented exposure to oseltamivir through either treatment or chemoprophylaxis, three patients had no documented oseltamivir exposure, eight are under investigation to determine exposure to oseltamivir, and oseltamivir exposure cannot be determined for one patient. (Source: CDC - http://www.cdc.gov/flu/weekly/).

Section One: Laboratory Surveillance

Enhanced pediatric influenza surveillance (EPIS) is conducted through four Clark County, NV medical practices. Each practice submits up to 10 specimens each week from pediatric patients presenting with respiratory disease and the specimens are tested for influenza and typed by RT-PCR. National surveillance is conducted through laboratories participating in the Center for Disease Control and Prevention (CDC) National Respiratory and Enteric Virus Surveillance System (NREVSS) program.

Figure 1.1 Proportion of Influenza Viruses - Clark County Pediatric Influenza Surveillance



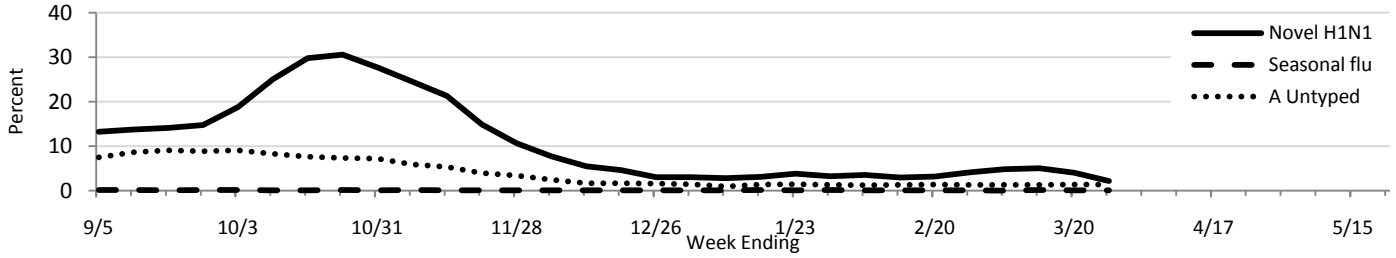
Note: The category of "seasonal flu" includes all influenza A types other than 2009 H1N1 and all influenza B. Source: EPIS

Table 1.1 Laboratory Testing - Clark County Pediatric Influenza Surveillance

	Week Ending										Season to Date From 8/30/09	
	3/6		3/13		3/20		3/27		4/3			
Testing Category	n	%	n	%	n	%	n	%	n	%	n	%
Influenza Negative	3	100	0	-	1	100	0	-	0	-	220	60
2009 H1N1 Positive	0	0	0	-	0	0	0	-	0	-	148	40
Flu A H1 (seasonal) Positive	0	0	0	-	0	0	0	-	0	-	0	0
Flu A H3 (seasonal) Positive	0	0	0	-	0	0	0	-	0	-	0	0
Flu B Positive	0	0	0	-	0	0	0	-	0	-	1	0
Specimens Tested	3		0		1		0		0		369	

Source: EPIS

Figure 1.2. Proportion of Influenza Viruses - National Laboratory Influenza Surveillance



Note: The category of "seasonal flu" includes all influenza A types other than 2009 H1N1 and all influenza B. Source: CDC/NRVESS

Table 1.2 Laboratory Testing Results - National Influenza Surveillance

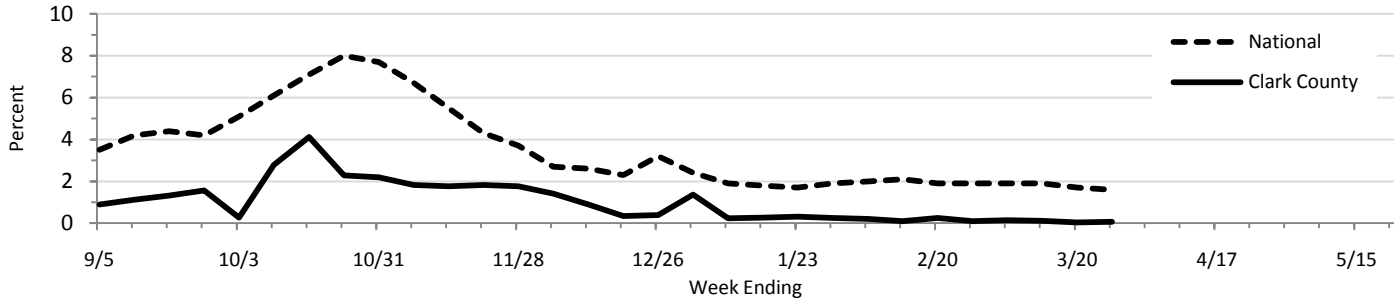
	Week Ending								Season to Date From 8/30/09	
	3/6		3/13		3/20		3/27			
Testing Category	n	%	n	%	n	%	n	%	n	%
Influenza Negative	6,537	94	6,291	94	4,723	95	2,678	97	333,063	79
2009 H1N1 Positive	338	5	336	5	201	4	59	2	66,589	16
Flu A H1 (seasonal) Positive	0	0	0	0	1	0	1	0	65	0
Flu A H3 (seasonal) Positive	0	0	0	0	0	0	0	0	35	0
Flu A Positive, Untyped	92	1	85	1	69	1	37	1	22,609	5
Flu B Positive	2	0	9	0	2	0	0	0	287	0
Specimens Tested	6,969		6,721		4,996		2,775		422,648	

Note: National data lags local data by one week, thus national data for the most recent week are unavailable. Source: CDC/NRVESS

Section Two: Sentinel Physician Influenza-Like Illness Surveillance

Data from physicians enrolled in the Center for Disease Control and Prevention's Outpatient Influenza-like Illness Surveillance Network (ILINet) indicate the percentage of all patients in a given week presenting with influenza-like illness (ILI), which is defined as a fever and either a cough or sore throat.

Figure 2.1 Percentage of Visits for Influenza-Like Illness Reported to ILINet, Locally and Nationally

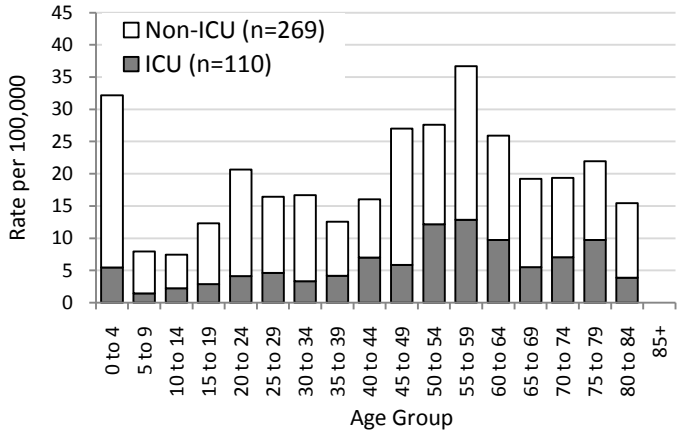


Note: ILI data collection for the previous week is not complete when this report is generated, and results will lag other parts of this report by one week. Source: CDC/ILINet

Section Three: Clark County Reportable Disease Surveillance

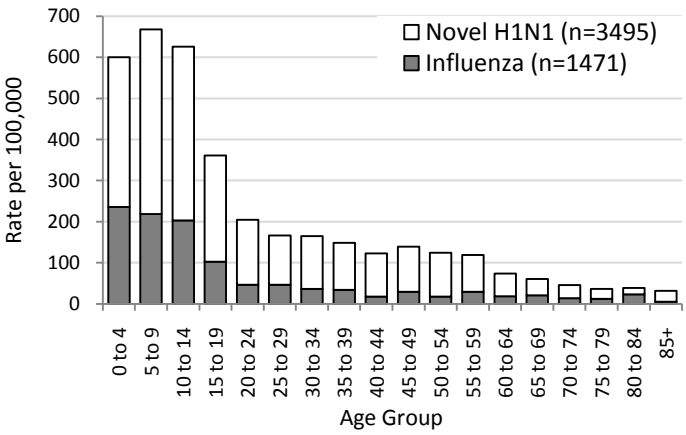
Per Nevada Administrative Code 441A.575, healthcare providers and laboratories must report all laboratory-confirmed cases of influenza to the health authority. Reported hospitalizations are further investigated for the presence of underlying risk factors and for the severity of illness, including intensive care unit (ICU) admission.

Figure 3.1 Clark County Reported Influenza Hospitalization Rates by Age, Season to Date



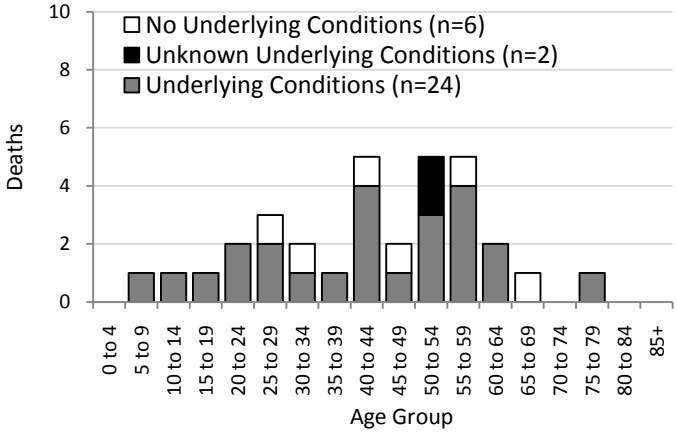
Source: Southern Nevada Health District

Figure 3.2 Clark County Reported Influenza Case Rates by Age, Season to Date



Source: Southern Nevada Health District

Figure 3.3 Clark County Reported Influenza Deaths by Age, Season to Date



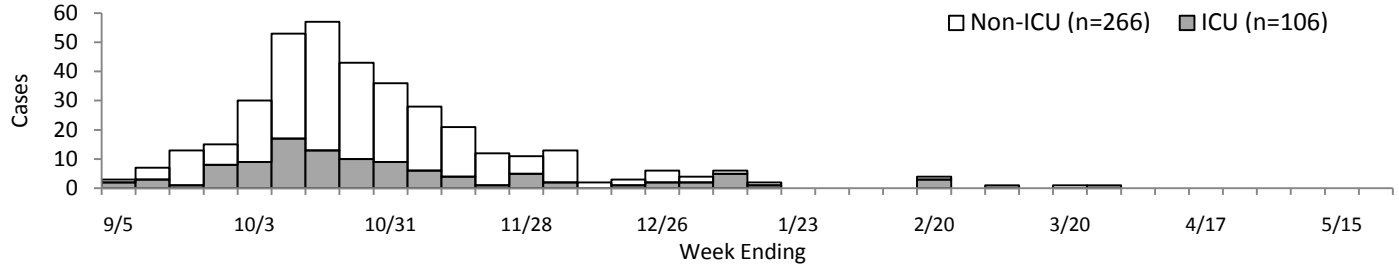
Source: Southern Nevada Health District

Textbox 3.1 Details of Influenza-Related Deaths, Clark County, Week Ending April 03, 2010

1 death:

10M with underlying conditions

Figure 3.4 Influenza Hospitalizations, Season to Date (From August 30, 2009), Clark County



Note: Data are presented by "event date", the earliest known date for a case. Although this is ideally a disease onset date, a standardized, hierarchical process is used to assign this date when the onset date is unavailable. Hospitalization that occurred before Aug. 30 but were reported Aug. 30 or after are not included in this figure, as data are displayed by the date of hospitalization.

Figure 3.5 Influenza Deaths, Season to Date (From August 30, 2009) by Date of Death, Clark County

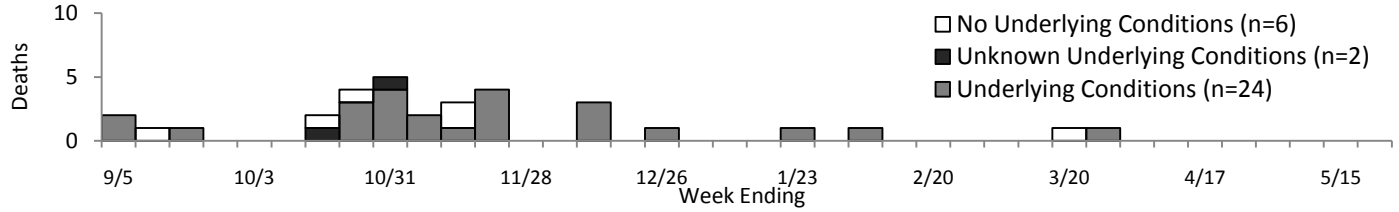


Table 3.1 Counts Influenza Cases by Type, Hospitalizations by Type, and Deaths, Most Recent Week and Season to Date (From August 30, 2009)

	Reported Week Ending April 03, 2010							Season To Date (From August 30, 2009)						
	Cases Reported			Deaths	Hospitalizations			Cases Reported			Deaths	Hospitalizations		
Age Group	Influenza	Novel N1H1 Influenza	Total		Non-ICU Admissions	ICU Admissions	Total Admissions	Influenza	Novel N1H1 Influenza	Total		Non-ICU Admissions	ICU Admissions	Total Admissions
0 to 4	0	0	0	0	0	0	0	344	533	877	0	39	8	47
5 to 9	1	0	1	0	0	0	0	302	621	923	1	9	2	11
10 to 14	0	1	1	1	0	0	0	272	566	838	1	7	3	10
15 to 19	0	0	0	0	0	0	0	141	357	498	1	13	4	17
20 to 24	0	0	0	0	0	0	0	67	230	297	2	24	6	30
25 to 29	0	0	0	0	0	0	0	71	183	254	3	18	7	25
30 to 34	0	0	0	0	0	0	0	54	193	247	2	20	5	25
35 to 39	0	0	0	0	0	0	0	49	164	213	1	12	6	18
40 to 44	0	0	0	0	0	0	0	25	151	176	5	13	10	23
45 to 49	0	0	0	0	0	0	0	40	151	191	2	29	8	37
50 to 54	0	0	0	0	0	0	0	22	131	153	5	19	15	34
55 to 59	0	0	0	0	0	0	0	32	98	130	5	26	14	40
60 to 64	0	0	0	0	0	0	0	17	51	68	2	15	9	24
65 to 69	0	0	0	0	0	0	0	15	29	44	1	10	4	14
70 to 74	0	0	0	0	0	0	0	8	18	26	0	7	4	11
75 to 79	0	0	0	0	0	0	0	5	10	15	1	5	4	9
80 to 84	0	0	0	0	0	0	0	6	4	10	0	3	1	4
85+	0	0	0	0	0	0	0	1	5	6	0	0	0	0
Total	1	1	2	1	0	0	0	1,471	3,495	4,966	32	269	110	379

Note: Case and hospitalization data for the most recent week are limited to those cases reported in the one-week period ending on the date listed, and are based solely on the date in which the case was reported to SNHD. Cases listed as "Novel H1N1 Influenza" are confirmed by RT-PCR. Cases listed as "Influenza" include all patients who tested positive by a rapid influenza test and have either had no confirmatory testing or confirmatory testing indicating the presence of seasonal influenza. Case categories are mutually exclusive, as are hospitalization categories. Deaths listed are by the date on which the patient died. Cumulative totals may not add up to the current week total plus the cumulative total from the previous week, as cases from previous weeks can be reclassified from Influenza to Novel H1N1 based on new lab results, and duplicates are identified and removed.