Summary

For the week ending November 14, 2009:

- Influenza activity continues throughout Southern Nevada, although it decreased over the first two weeks on November
- Several surveillance systems are showing a decrease in influenza activity. However, it is not possible to determine if this is a short-term aberration or the beginning of a trend of decreasing influenza activity
- There is currently no evidence of increased severity of disease in Southern Nevada or the US
- Local and national laboratory surveillance indicates that nearly all reported cases of influenza are the result of 2009 Influenza A (H1N1)
- 442 cases, including 35 hospitalizations and 2 deaths were reported to the health district. The deaths include a 33-year-old female with underlying health conditions and a 66-year-old male with no underlying health conditions

Current Status

Circulation

Over the first two weeks of November, influenza activity has decreased in both Southern Nevada and nationwide. All ten geographic regions of the country are continuing to report elevated levels of influenza, and 44 states are reporting widespread geographic distribution of influenza, down from 48 states in the previous week (Source: CDC FluView). Both local and nationwide laboratory testing is showing a decrease in the testing positivity rates (Figure 1.1 and Table 1.1). Sentinel provider reports of patients seeking care for influenza-like illness has displayed the same trend (Figure 2.1). The number of patients hospitalized for influenza decreased during the second week of November (Figure 3.4 and Table 3.1). Although several surveillance systems are showing a decrease in influenza activity, it is not possible to determine if this is a short-term aberration or the beginning of a trend of decreasing influenza activity.

Severity

There is currently no evidence of increased severity of disease in Southern Nevada or in the United States. An indicator of the severity of disease, the proportion of hospitalized patients requiring intensive care unit admission, has decreased over the past two weeks. During September and early October, about one-third of hospitalized patients were admitted to the intensive care unit; for the first half of November, one quarter of hospitalized patients required admission to the intensive care unit. Two influenza-related deaths were reported last week, and one of the two deaths occurred in person who was at higher risk for serious disease as a result of underlying health conditions (Figure 3.5).

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 250 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).

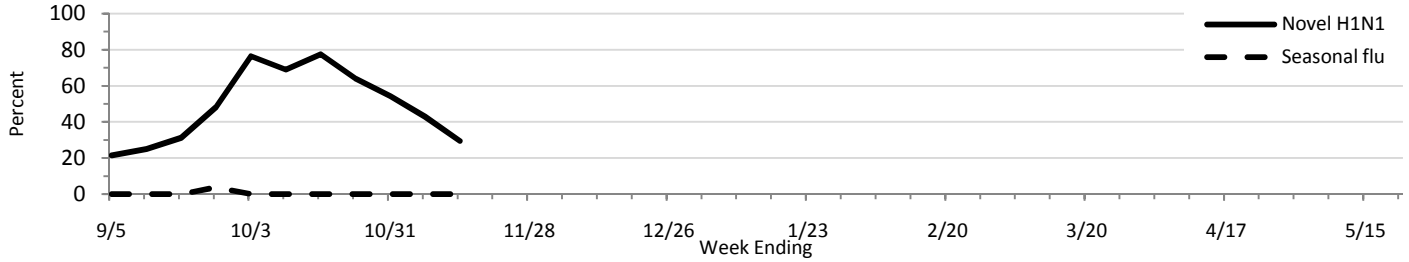
Antiviral Resistance

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 15 cases of oseltamivir resistance have been identified in the United States. Twelve of these patients had documented exposure to oseltamivir through either treatment or chemoprophylaxis, one patient had no documented oseltamivir exposure, and one patient is under investigation to determine exposure to oseltamivir. (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



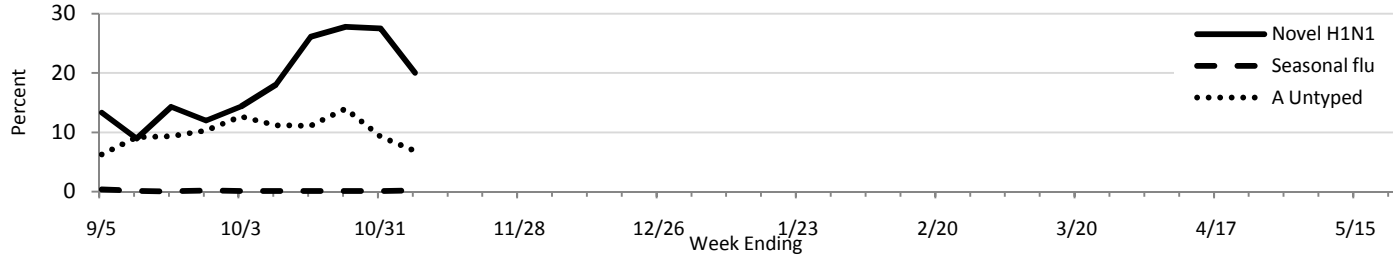
Note: The category of "seasonal flu" includes all influenza A types other than 2009 H1N1 and all influenza B. Source: EPIS

Table 1.1 Laboratory Testing - Clark County Pediatric Influenza Surveillance

	Week Ending										Season to Date From 8/30/09	
	10/17		10/24		10/31		11/7		11/14			
Testing Category	n	%	n	%	n	%	n	%	n	%	n	%
Influenza Negative	7	23	9	36	11	46	12	57	12	71	112	45
2009 H1N1 Positive	24	77	16	64	13	54	9	43	5	29	137	55
Flu A H1 (seasonal) Positive	0	0	0	0	0	0	0	0	0	0	0	0
Flu A H3 (seasonal) Positive	0	0	0	0	0	0	0	0	0	0	0	0
Flu B Positive	0	0	0	0	0	0	0	0	0	0	1	0
Specimens Tested	31		25		24		21		17		250	

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

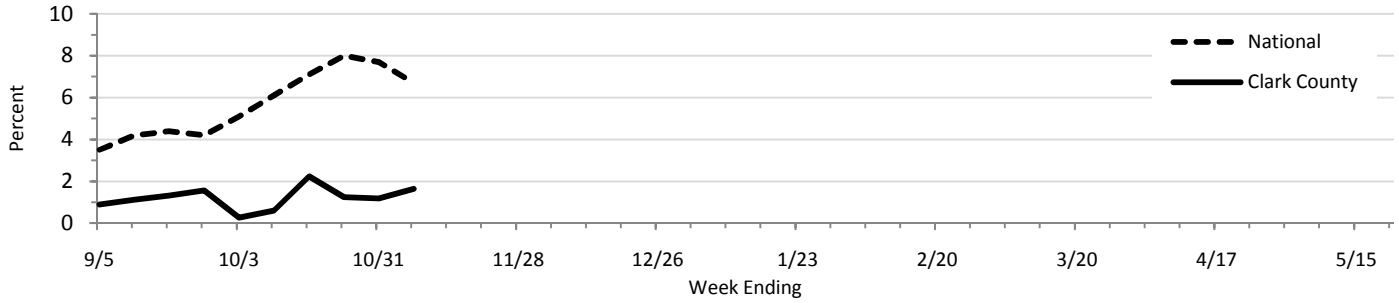
	Week Ending								Season to Date From 8/30/09	
	10/17		10/24		10/31		11/7			
Testing Category	n	%	n	%	n	%	n	%	n	%
Influenza Negative	8,088	62	11,374	58	8,893	63	10,317	73	81,356	69
2009 H1N1 Positive	3,378	26	5,453	28	3,889	27	2,830	20	23,499	20
Flu A H1 (seasonal) Positive	0	0	0	0	2	0	0	0	24	0
Flu A H3 (seasonal) Positive	0	0	0	0	2	0	0	0	18	0
Flu A Positive, Untyped	1,466	11	2,794	14	1,351	10	985	7	12,548	11
Flu B Positive	11	0	21	0	14	0	19	0	102	0
Specimens Tested	12,943		19,642		14,151		14,151		117,547	

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

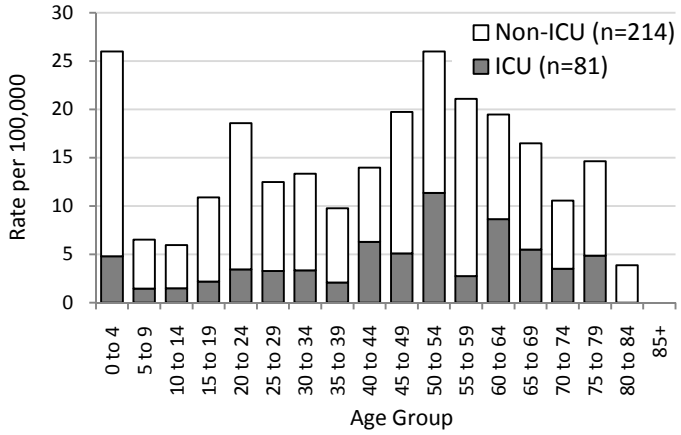


Note: ILI data collection for the previous week is not complete when this report is generated, and results will lag other parts of this report by one week. Source: CDC/ILINet

Section Three: Clark County Reportable Disease Surveillance

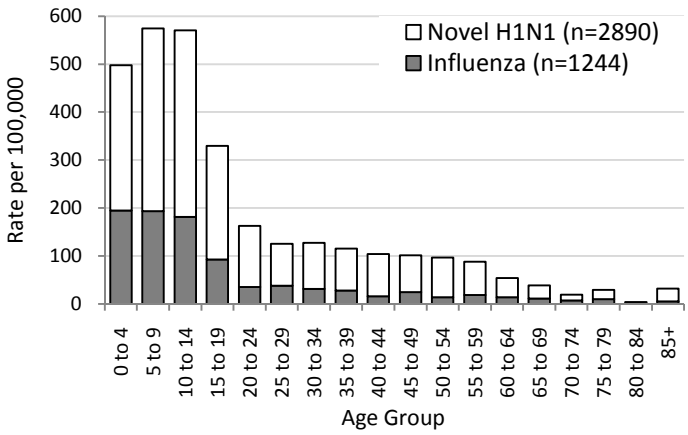
Per Nevada Administrative Code 441A.575, healthcare providers and laboratories must report all laboratory-confirmed cases of influenza to the health authority. Reported hospitalizations are further investigated for the presence of underlying risk factors and for the severity of illness, including intensive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

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



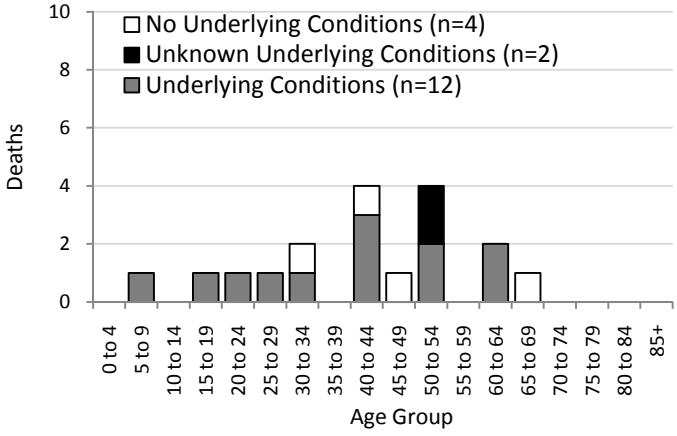
Source: Southern Nevada Health District

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

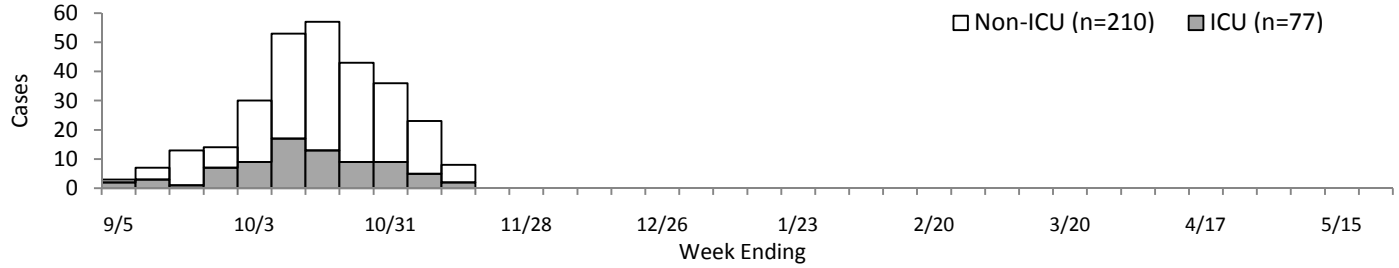
Textbox 3.1 Details of Influenza-Related Deaths, Clark County, Week Ending November 14, 2009

2 deaths:

33F with underlying conditions

66M without 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

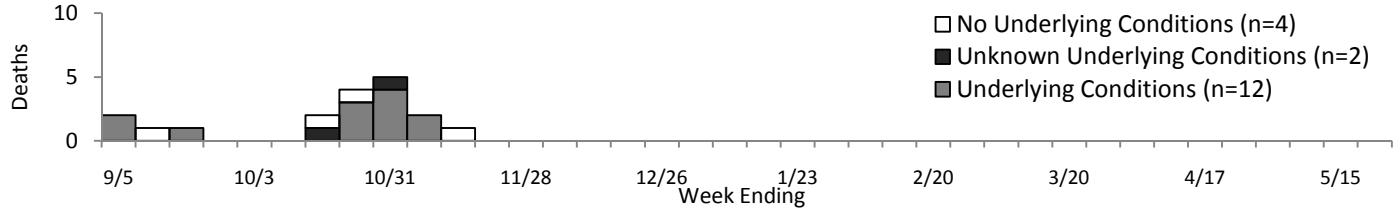


Table 3.1 Counts Influenza Cases by Type, Hospitalizations by Type, and Deaths, Most Recent Week and Season to Date (From August 30, 2009)

	Reported Week Ending November 14, 2009							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	34	70	104	0	5	0	5	285	443	728	0	31	7	38
5 to 9	22	44	66	0	0	0	0	267	527	794	1	7	2	9
10 to 14	16	35	51	0	1	0	1	243	521	764	0	6	2	8
15 to 19	6	19	25	0	0	0	0	128	326	454	1	12	3	15
20 to 24	2	21	23	0	2	1	3	51	185	236	1	22	5	27
25 to 29	12	27	39	0	2	0	2	58	133	191	1	14	5	19
30 to 34	11	20	31	1	0	1	1	47	144	191	2	15	5	20
35 to 39	0	13	13	0	1	1	2	40	125	165	0	11	3	14
40 to 44	5	13	18	0	1	0	1	23	126	149	4	11	9	20
45 to 49	6	11	17	0	2	1	3	34	105	139	1	20	7	27
50 to 54	3	16	19	0	2	3	5	17	102	119	4	18	14	32
55 to 59	4	12	16	0	3	0	3	20	76	96	0	20	3	23
60 to 64	0	10	10	0	3	1	4	13	37	50	2	10	8	18
65 to 69	1	4	5	1	1	0	1	8	20	28	1	8	4	12
70 to 74	0	0	0	0	0	1	1	4	7	11	0	4	2	6
75 to 79	2	3	5	0	2	0	2	4	8	12	0	4	2	6
80 to 84	0	0	0	0	1	0	1	1	0	1	0	1	0	1
85+	0	0	0	0	0	0	0	1	5	6	0	0	0	0
Total	124	318	442	2	26	9	35	1,244	2,890	4,134	18	214	81	295

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 or 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.