

Update Number 7: December 2, 2009

Data for the Week Ending November 28, 2009

Summary

For the week ending November 28, 2009:

- Influenza activity continues to decrease in Southern Nevada, a trend that has continued over the month of November.
- There is currently no evidence of increased severity of disease in Southern Nevada.
- Local laboratory surveillance indicates that nearly all reported cases of influenza are the result of 2009 Influenza A (H1N1).
- 98 influenza cases, including 6 hospitalizations and 1 death were reported to the health district. The death occurred in a 55-year-old female with underlying health conditions.

Current Status

Circulation

Over the month of November, influenza activity decreased in Southern Nevada. Nationally, for the third week of November, all ten geographic regions of the country continued to report elevated levels of influenza, and 32 states reported widespread geographic distribution of influenza, down from 43 states in the previous week (Source: CDC FluView). Local 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 last week of November (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. An indicator of the severity of disease, the proportion of hospitalized patients in Clark County requiring intensive care unit admission, has continued to decline over the past three weeks. One influenza-related death was reported last week, and occurred in a woman 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 285 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 23 cases of oseltamivir-resistance have been identified in the United States. Thirteen of these patients had documented exposure to oseltamivir through either treatment or chemoprophylaxis, one patient had no documented oseltamivir exposure, and nine are under investigation to determine exposure to oseltamivir. (Source: CDC - <http://www.cdc.gov/flu/weekly/>).

Prevalence Estimates

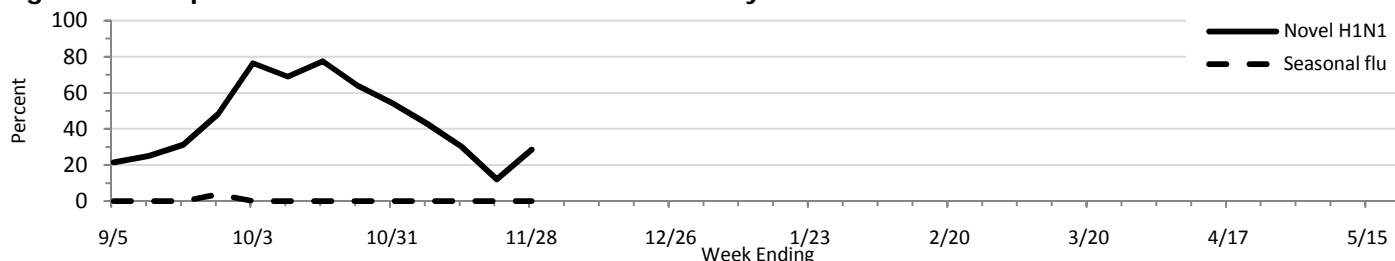
The Centers for Disease Control and Prevention (CDC) has recently published a report that estimates that for each case of H1N1 reported in the spring and summer of 2009, there were 78 additional people infected.¹ Using this multiplier, it is estimated that approximately 250,000 Clark County residents (or one-eighth of the population) have been infected with H1N1 influenza this fall. This is consistent with CDC estimates that between 5% and 20% of the population is infected with influenza each season. The youngest age groups have had the highest attack rate, with over one-quarter of children aged 0 to 4, and one-third of the children aged 5 to 14 having been infected. The lowest attack rates are in persons over 60 years of age, where approximately 2% of the population has been infected.

1. Reed C, Angulo FJ, Swerdlow DL, Lipsitch M, Meltzer MI, Jernigan D, et al. Estimates of the prevalence of pandemic (H1N1) 2009, United States, April–July 2009. *Emerg Infect Dis.* 2009 Dec.

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



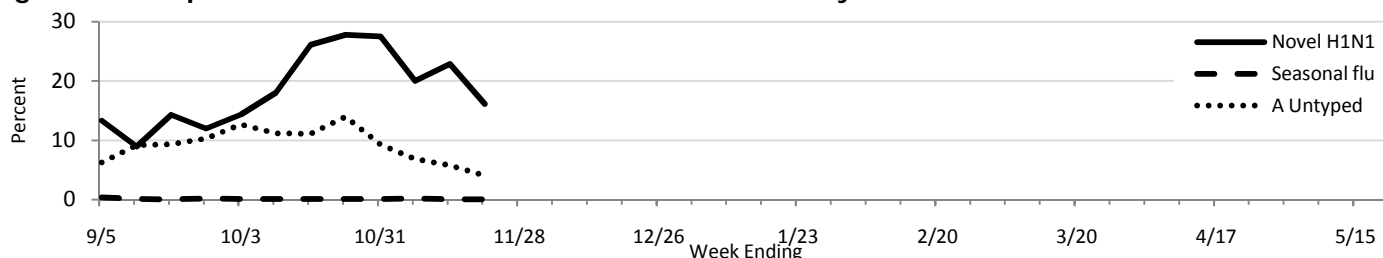
Note: The category of "seasonal flu" includes all influenza A types other than 2009 H1N1 and all influenza B. Source: EPIS

Table 1.1 Laboratory Testing - Clark County Pediatric Influenza Surveillance

Testing Category	Week Ending										Season to Date	
	10/31		11/7		11/14		11/21		11/28		From 8/30/09	
	n	%	n	%	n	%	n	%	n	%	n	%
Influenza Negative	11	46	12	57	14	70	22	88	5	71	141	49
2009 H1N1 Positive	13	54	9	43	6	30	3	12	2	29	143	50
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	24		21		20		25		7		285	

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/NREVSS

Table 1.2 Laboratory Testing Results - National Influenza Surveillance

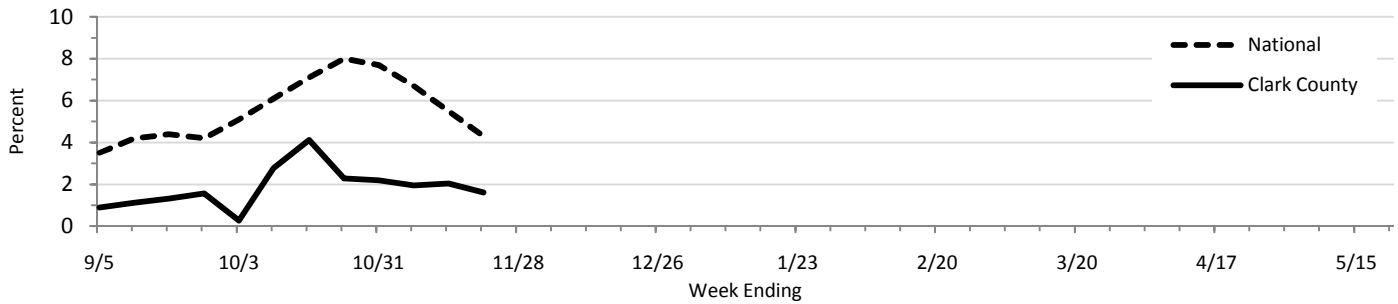
Testing Category	Week Ending								Season to Date	
	10/31		11/7		11/14		11/21		From 8/30/09	
	n	%	n	%	n	%	n	%	n	%
Influenza Negative	8,893	63	10,317	73	7,697	71	7,279	79	96,332	70
2009 H1N1 Positive	3,889	27	2,830	20	2,468	23	1,478	16	27,445	20
Flu A H1 (seasonal) Positive	2	0	0	0	0	0	0	0	24	0
Flu A H3 (seasonal) Positive	2	0	0	0	1	0	1	0	20	0
Flu A Positive, Untyped	1,351	10	985	7	634	6	395	4	13,577	10
Flu B Positive	14	0	19	0	3	0	6	0	111	0
Specimens Tested	14,151		14,151		10,803		9,159		137,509	

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

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

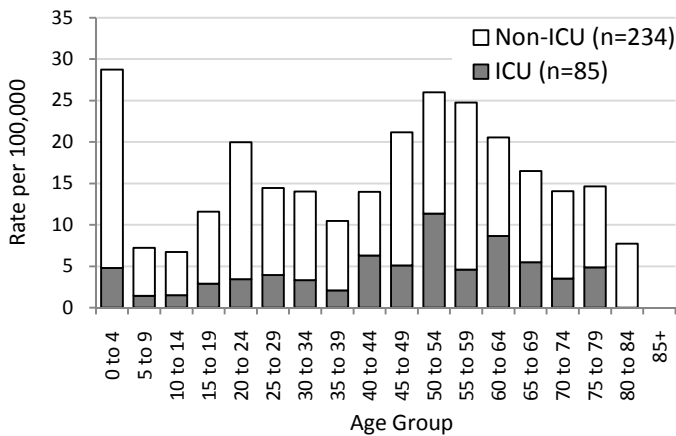


Note: ILI data collection for the previous week is not complete when this report is generated, and results will lag other parts of this report by one week. Source: CDC/ILINet

Section Three: Clark County Reportable Disease Surveillance

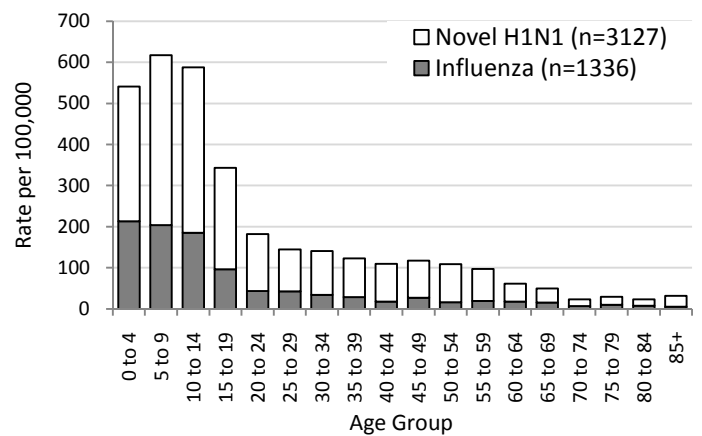
Per Nevada Administrative Code 441A.575, healthcare providers and laboratories must report all laboratory-confirmed cases of inﬂuenza to the health authority. Reported hospitalizations are further investigated for the presence of underlying risk factors and for the severity of illness, including intensive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

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



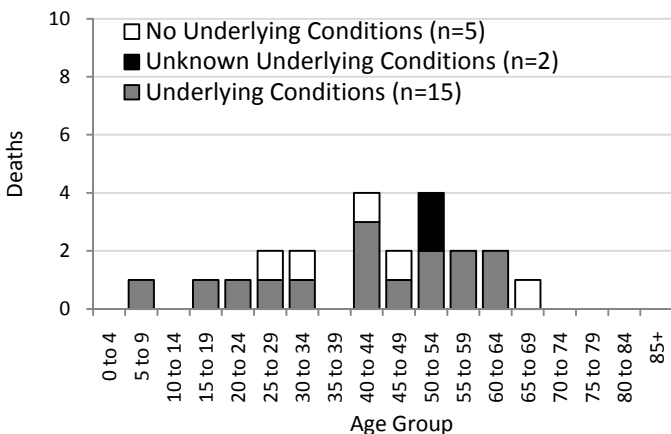
Source: Southern Nevada Health District

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

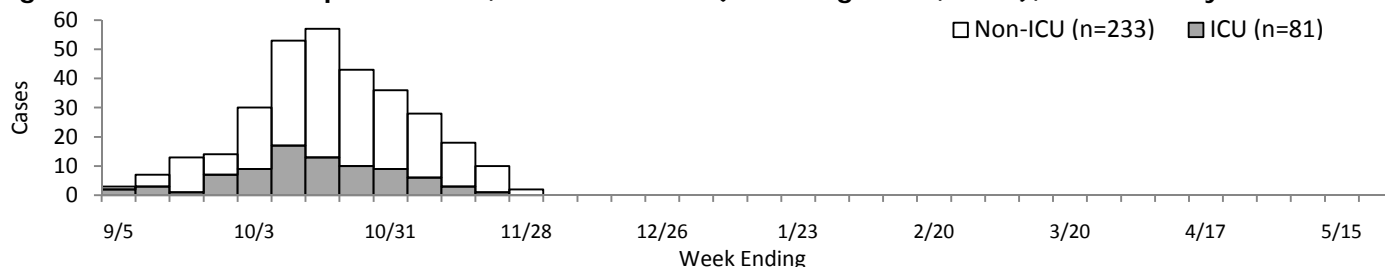


Source: Southern Nevada Health District

Textbox 3.1 Details of Inﬂuenza-Related Deaths, Clark County, Week Ending November 28, 2009

1 death:
55F 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

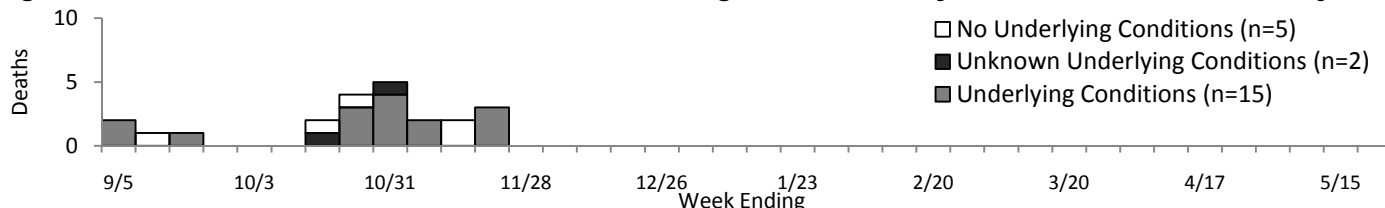


Table 3.1 Counts Inﬂuenza Cases by Type, Hospitalizations by Type, and Deaths, Most Recent Week and Season to Date (From August 30, 2009)

Age Group	Reported Week Ending November 28, 2009					Season To Date (From August 30, 2009)								
	Cases Reported			Deaths	Hospitalizations			Cases Reported			Deaths	Hospitalizations		
	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	13	12	25	0	1	0	1	312	479	791	0	35	7	42
5 to 9	6	11	17	0	1	0	1	282	571	853	1	8	2	10
10 to 14	2	1	3	0	0	0	0	248	539	787	0	7	2	9
15 to 19	3	3	6	0	0	1	1	133	340	473	1	12	4	16
20 to 24	3	4	7	0	0	0	0	63	201	264	1	24	5	29
25 to 29	5	6	11	0	0	0	0	65	155	220	2	16	6	22
30 to 34	0	4	4	0	0	0	0	51	160	211	2	16	5	21
35 to 39	1	4	5	0	0	0	0	41	135	176	0	12	3	15
40 to 44	0	3	3	0	0	0	0	25	132	157	4	11	9	20
45 to 49	0	5	5	0	1	0	1	37	124	161	2	22	7	29
50 to 54	1	2	3	0	0	0	0	20	114	134	4	18	14	32
55 to 59	0	3	3	1	1	0	1	21	85	106	2	22	5	27
60 to 64	1	1	2	0	0	0	0	16	41	57	2	11	8	19
65 to 69	1	2	3	0	0	0	0	11	25	36	1	8	4	12
70 to 74	0	0	0	0	0	0	0	4	9	13	0	6	2	8
75 to 79	0	0	0	0	0	0	0	4	8	12	0	4	2	6
80 to 84	0	1	1	0	1	0	1	2	4	6	0	2	0	2
85+	0	0	0	0	0	0	0	1	5	6	0	0	0	0
Total	36	62	98	1	5	1	6	1,336	3,127	4,463	22	234	85	319

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.