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# Influenza Surveillance Report – 2018-2019 Season - Week 5

## Data from January 27, 2019 to February 2, 2019

**Introduction**

The purpose of this report is to provide ongoing description and assessment of the activity and types of circulating influenza viruses, and to assess morbidity, hospitalization and mortality related to influenza. It is meant to provide healthcare providers and facilities, public health professionals, policy makers, the media and the public with a general understanding of the severity and burden of the current flu season on a weekly basis in Nevada and nationwide. Data from several surveillance programs analyzed in this report is provisional and may change as additional information become available.

If you have questions or comments about this report, are interested in having your medical facility join the sentinel provider program, or have any questions about your facility's participation or reporting, please contact Ashleigh Faulstich, MPH at afaulstich@health.nv.gov or (775) 684-5292.

**Influenza activity in the State of Nevada is presently widespread**: Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in at least half the regions of the state with recent laboratory evidence of influenza in the state.

Table 1:

| Week 5 Summary | | | | | |
|---|---|---|---|---|---|
| | ILI Current Activity | ILI Activity Baseline | Influenza -related Hospitalization | Influenza -related Mortality | Pneumonia and Influenza Mortality |
| Nevada | 2.28% | 1.36% | 60 (2.0 per 100,000) | 1/418 (0.24%) | 20/418 (4.78%) |
| Region 9 | 3.28% | 2.40% | pending | 25/5,993 (0.42%) | 432/5,993 (7.28%) |
| National | 4.31% | 2.20% | 2.8 per 100,000 | 182/36,452 (0.50%) | 2,367/36,452 (6.49%) |

**Local Health Authority (LHA) reports**

Weekly influenza reports from the three LHAs are available on the respective websites:

- Southern Nevada Health District: https://www.southernnevadahealthdistrict.org/stats-reports/influenza-surveillance.php
- Washoe County Health District: https://www.washoecounty.us/health/programs-and-services/communicable-diseases-and-epidemiology/statistics_surveillance_reports/influenza-surveillance/index.php
- Carson City Health & Human Services: Western NV Regional Influenza Report: http://gethealthycarsoncity.org/seasonalflu/

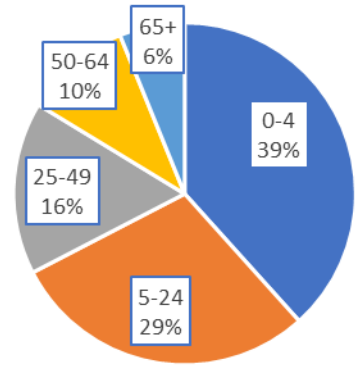
**Sentinel Provider Program Description**

The sentinel provider program is a partnership between clinicians, healthcare facilities, local health authorities (LHA), the Nevada Division of Public and Behavioral Health, and the Centers for Disease Control and Prevention (CDC). Sentinel providers voluntarily submit a weekly report to the CDC of the number of patients seen at their facility with influenza-like illness (ILI) by age group as well as the total number of patients seen for any reason. ILI is defined as fever (≥ 100°F, 37.8°C) in the presence of cough and/or sore throat without a known cause other than influenza. Sentinel providers may also submit nasal, throat, and/or nasopharyngeal swabs for selected patients to the Nevada State Public Health Laboratory (NSPHL) for viral testing and subtyping at no cost to the patient or provider.

**Sentinel Provider Influenza-Like Illness (ILI) Activity:**

**Figure 1** shows the percent of ILI patients by age group for week five. Those age 0-4 represented 39% of all reported ILI cases in Nevada. 29% of cases were ages 5-24, 16% ages 25-49, 10% ages 50-64, and 6% ages 65 and older.

Figure 1:




In week five, 9,921 patient visits were reported by sentinel providers in Nevada, of which 226 met criteria for ILI, representing 2.3% of the sample. ILI activity was above the Nevada baseline of 1.4%. **Figure 2** shows the percent of reported visits statewide for which the patient met clinical criteria for ILI. The current influenza season (2018 week 40 – 2019 week 20), in bold, is overlaid with the prior four seasons.

For week five, 3.3% of patients reported in Region 9 (AZ, CA, HI, NV, and US Pacific Islands) and 4.3% of patients reported nationally met criteria for ILI. The regional activity level is greater than the regional baseline of 2.4% and the national activity level is greater than the national baseline of 2.2%.

**Figure 3** displays a comparison of the percent of visits which met ILI criteria for Nevada, Region Nine, and nationally.

Figure 2.

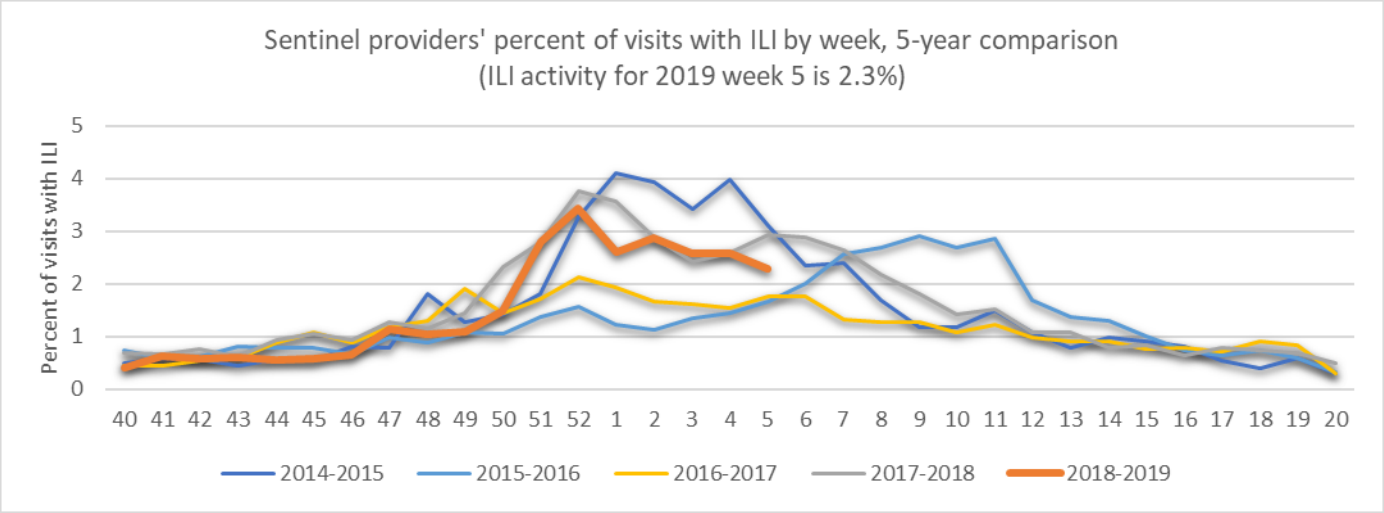
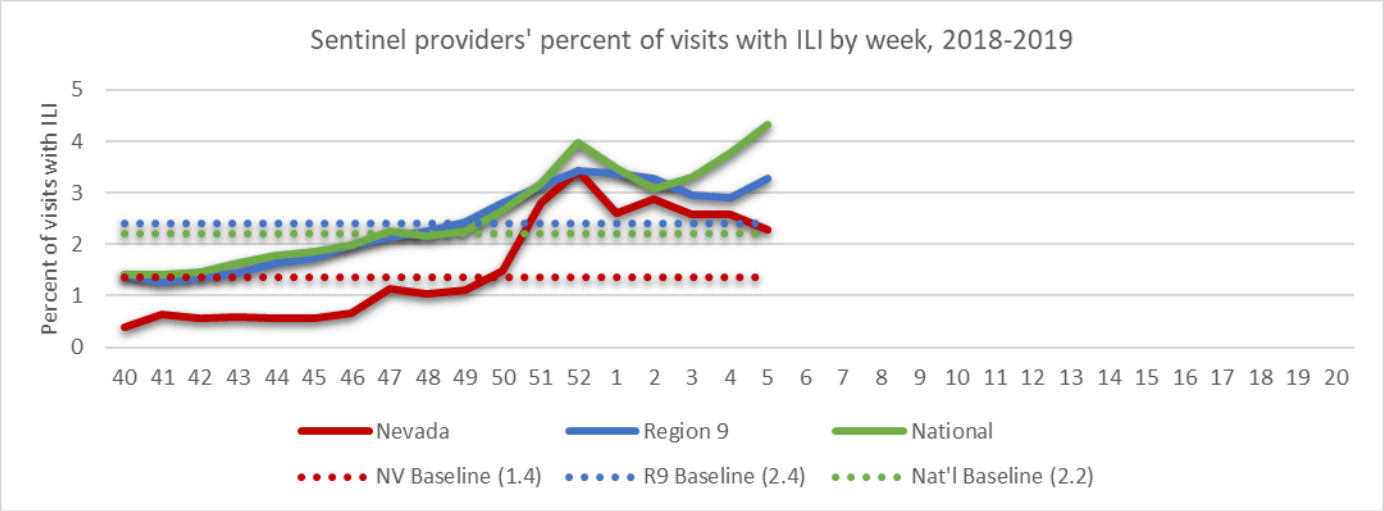


Figure 3.




**Sentinel Providers Virologic Testing**

The Nevada State Public Health Laboratory (NSPHL) and other laboratories provide influenza virus testing and subtyping for specimens submitted by sentinel providers. For week five, 28 specimens were positive of 80 submitted (35%). From week 40 to date, 213 specimens were positive of 782 submitted (27%). **Figure 4** shows the number of laboratory-confirmed influenza cases by subtype expressed as a percentage of all laboratory-confirmed specimens tested. Of the 213 positive specimens to date, 107 were typed as influenza A (2009 H1N1), 92 as A (subtyping not performed), seven as A (H3N2), and seven as B (subtyping not performed. **Table 2** shows the number of sentinel site specimens tested by laboratory this season and the number and percent positive for influenza of any type.

Figure 4:

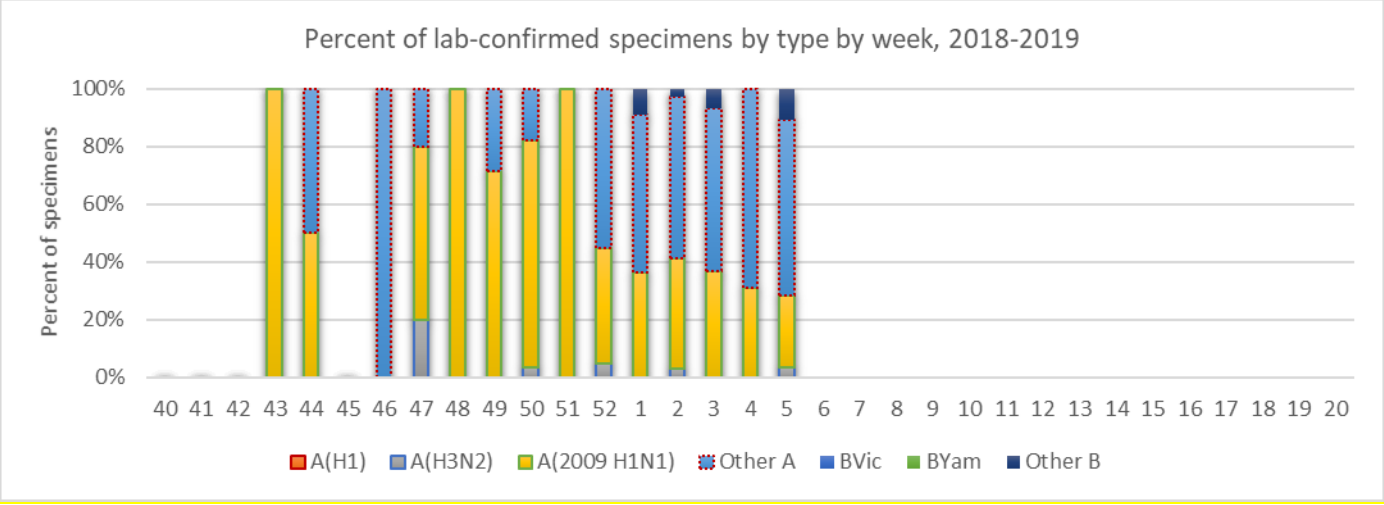



Table 2:

| Lab | # of tests performed | # positive | % positive |
|---|---|---|---|
| Nevada State Public Health Lab (NSPHL) | 127 | 88 | 69% |
| Southern Nevada Public Health Lab (SNPHL) | 48 | 4 | 8% |
| All other labs | 607 | 121 | 20% |
| Total | 782 | 213 | 27% |

**Influenza Hospitalizations**

LHAs investigate and report to DPBH Influenza-associated hospitalizations. **Figure 5** shows the number of patients hospitalized with influenza by jurisdiction. In week five, Washoe County Health District reports 12, Southern Nevada Health District reports 37, Carson City Health and Human Services reports nine, and Rural Health Services reports two. From week 40 to date, 633 total hospitalizations have been reported statewide. **Figure 6** shows the number of hospitalized patients by influenza type, if reported. For week five, 57 patients were type A with subtyping not performed, one was A (2009 H1N1), and type information was not yet available for the others.

**Table 3** shows reported characteristics of hospitalized patients. Data will continue to be entered as it becomes available through chart review. The "percent meet criteria" fields show the number of patients with each condition or risk factor expressed as a percentage of all hospitalized patients reported for that time period. For example, since week 40, 112 patients have been admitted to the ICU of 633 hospitalized patients.

Figure 5:

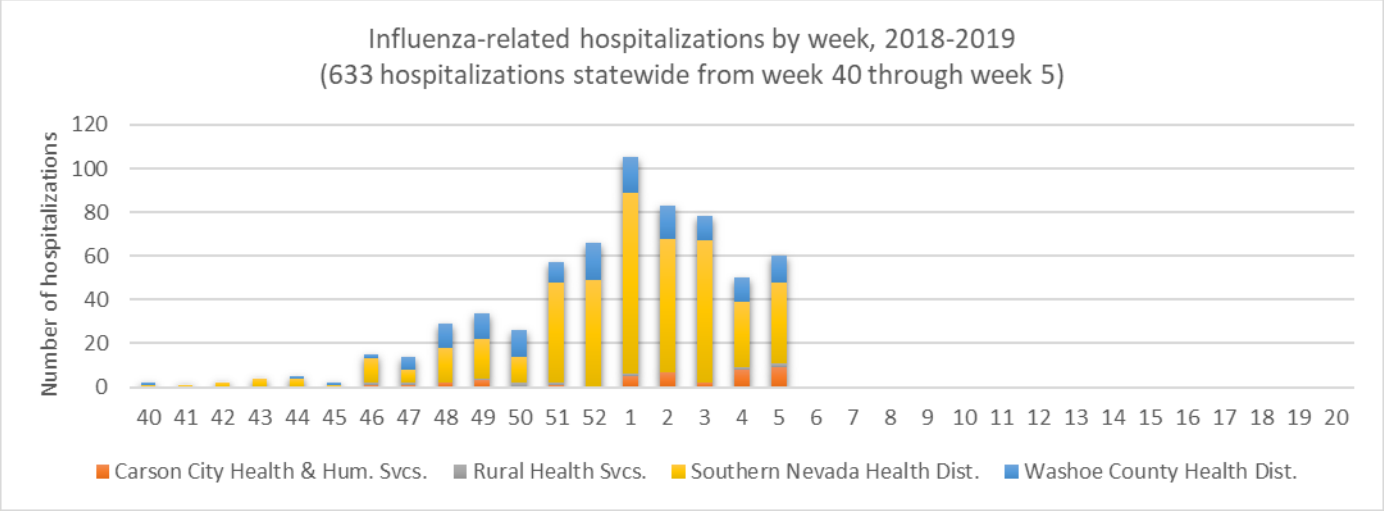



Figure 6:

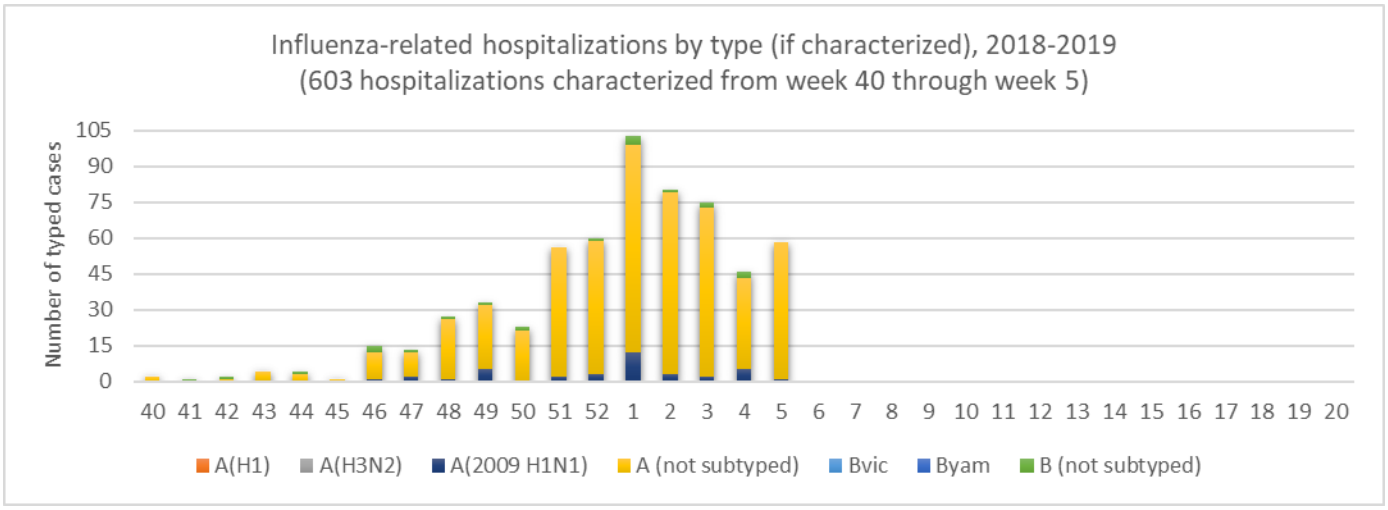


Table 3:

**Selected characteristics of hospitalized patients**

| | Week 5 (60 hospitalizations) | | Season-to-date (633 hosp.) | |
|---|---|---|---|---|
| criteria | # of Hospitalized who Met Criteria (of all those hospitalized that week) | % of Hospitalized who Met Criteria of all those hospitalized that week | # of Hospitalized who Met Criteria | % of Hospitalized who Met Criteria |
| **on ventilator** | 3 | 5% | 57 | 9% |
| **admitted to ICU** | 13 | 22% | 112 | 18% |
| **vaccinated** | 8 | 13% | 114 | 18% |
| **antiviral within 48h** | 22 | 37% | 224 | 35% |
| **antiviral at any time** | 55 | 92% | 568 | 90% |
| **pregnant*** | 1 | 2% | 17 | 3% |
| **resident of SNF/LTC*** | 0 | 0% | 0 | 0% |
| **Am-Indian/AK-Nat.*** | 0 | 0% | 1 | 0% |
| **asthma*** | 6 | 10% | 62 | 10% |
| **neurological cond.*** | 5 | 8% | 63 | 10% |
| **chronic lung disease*** | 14 | 23% | 158 | 25% |
| **heart disease*** | 28 | 47% | 215 | 34% |
| **blood disease*** | 2 | 3% | 25 | 4% |
| **endocrine disease*** | 12 | 20% | 120 | 19% |
| **kidney disease*** | 12 | 20% | 82 | 13% |
| **liver disease*** | 5 | 8% | 15 | 2% |
| **metabolic disorder*** | 4 | 7% | 54 | 9% |
| **immune disease*** | 3 | 5% | 43 | 7% |
| **under 19 on aspirin*** | 0 | 0% | 0 | 0% |
| **BMI >40*** | 0 | 0% | 23 | 4% |

**Average number of days in hospital**

| | average | median |
|---|---|---|
| Week 5 | 2.5 | 2.0 |
| season-to-date | 4.4 | 3.0 |

**Number of hospitalized patients in each age group****

| | 0-4 | 5-24 | 25-49 | 50-64 | 65+ |
|---|---|---|---|---|---|
| Week 5 | 4 | 7 | 10 | 22 | 17 |
| season-to-date | 59 | 60 | 118 | 189 | 207 |

**Number of patients by disposition****

| | home/ self care discharge | transferred to other hospital | transferred to SNF | home/ skilled care | left AMA | died |
|---|---|---|---|---|---|---|
| Week 5 | 19 | 2 | 1 | 3 | 0 | 1 |
| season-to-date | 364 | 14 | 31 | 22 | 4 | 17 |

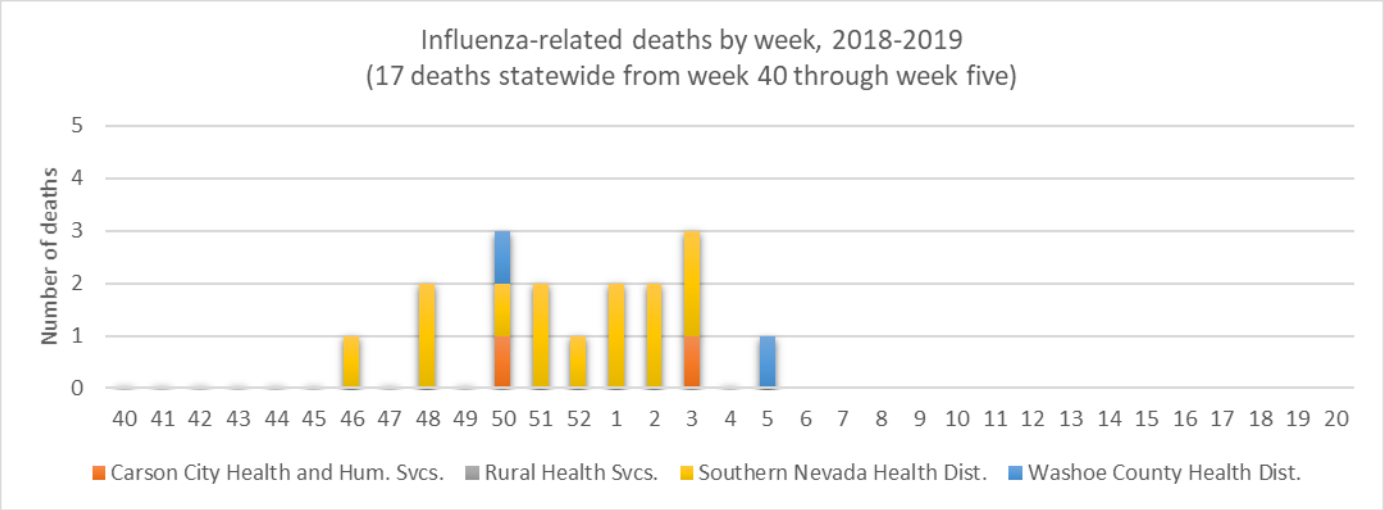
* CDC has identified these factors as associated with greater severity of influenza illness.

** Due to unavailable data, row totals do not match total numbers of hospitalized patients.

**Influenza Deaths**

Influenza-associated deaths are deaths from a clinically-compatible illness that was confirmed to be influenza by an appropriate laboratory or rapid diagnostic test with no period of complete recovery between illness and death. LHAs investigate all influenza deaths and typically review medical records retroactively up to 30 days from the date of death for an influenza diagnosis. **Figure 7** shows the number of influenza deaths by region for this flu season. One death was reported by Washoe County Health District in week five. There have been 17 influenza deaths reported statewide since week 40.

Figure 7:




**Syndromic Surveillance**

Syndromic surveillance uses near real-time, pre-diagnostic health data to analyze disease incidence. It may support the identification and characterization of outbreaks as supplemental data or as an early indicator of a possible outbreak. DPBH uses the National Syndromic Surveillance System (NSSP) Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE), a CDC web application, to collect these data from hospitals and urgent care facilities within the state. Chief complaint is used for immediate analysis; discharge diagnosis is used as it becomes available.

**Syndromic Surveillance ILI Activity**

**Figure 8** shows the number of visits with ILI for emergency, inpatient, and outpatient settings. For week five there were 832 emergency visits, 45 hospital admissions, and 453 outpatient visits reported. Emergency department visits increased by 11% from 752 in week four. **Figure 9** shows the percent of all visits with ILI by age group. For week four, 30% of visits were for ages 0-4, 35% for ages 5-24, 21% for ages 25-49, 9% for ages 50-64, and 5% for ages 65 and up.

Figure 8:

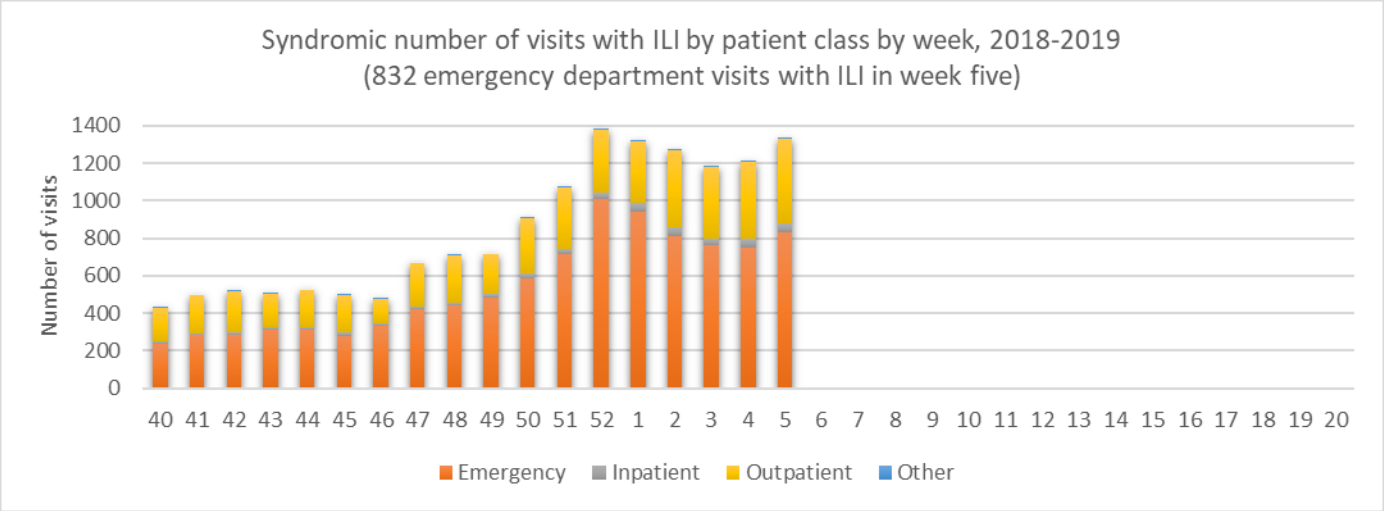
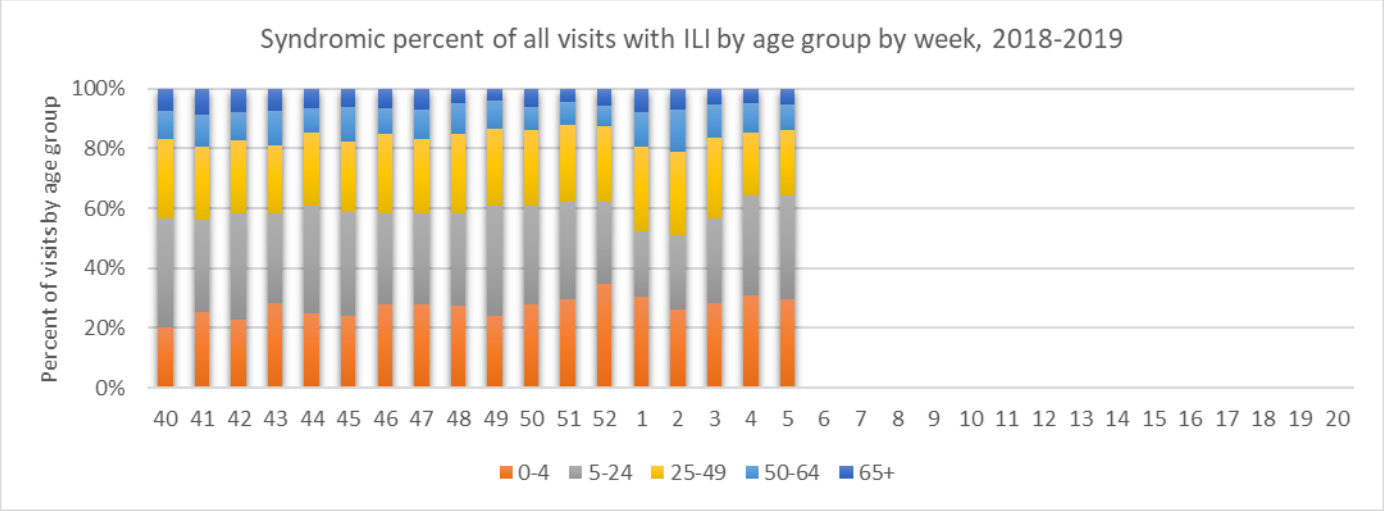


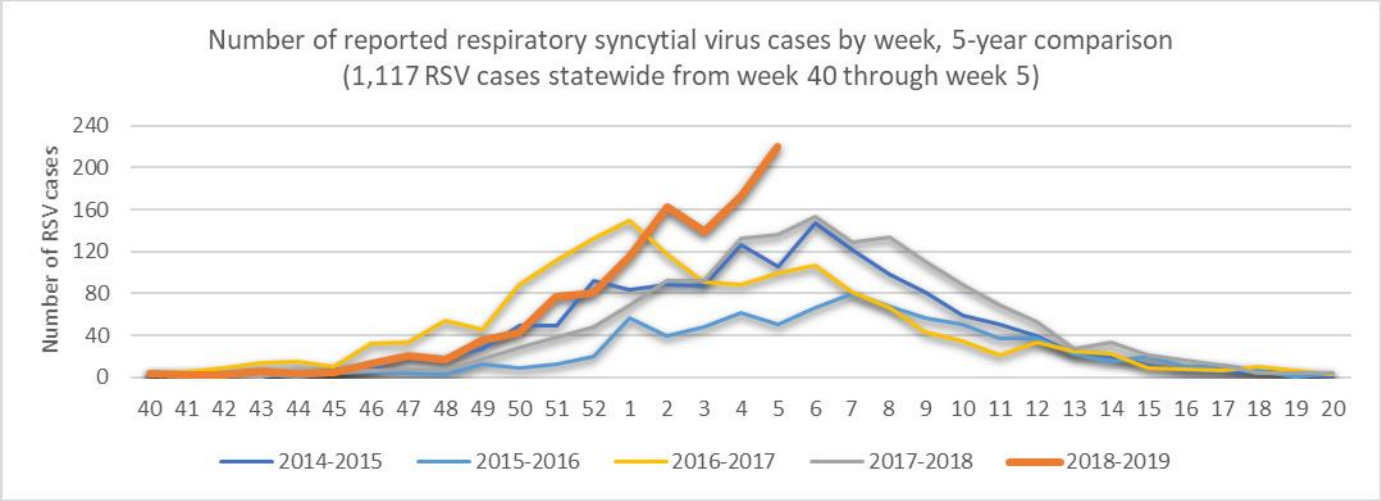

Figure 9:




**Respiratory syncytial virus**

From week 40 through week five, 1,117 RSV cases have been reported. In week five, 220 cases were reported. **Figure 10** shows the number of reported RSV cases for the current season compared with the number reported in the past four seasons.

Figure 10:




**Pneumonia and Influenza (P&I) Mortality Surveillance**

Death certificate data are used to calculate pneumonia and influenza deaths. The Division of Public and Behavioral Health is presently evaluating its data extraction methodology and will report P&I deaths in the future from internal data.

The CDC makes P&I death information available in its FluView Interactive GIS application. According to data from the CDC, Nevada's P&I mortality is 4.78% of all deaths reported (20 out of 418) for the most recent week. Region 9's P&I mortality is 7.28% of all deaths reported (432 out of 5,993), which is below the baseline of 7.7%; nationally 6.49% of all deaths are due to P&I (2,367 out of 36,452), which is below the baseline of 6.9%. Region 9's influenza-related mortality is 0.42% (25 out of 5,993) and nationally 0.50% of all deaths are influenza-related (182 out of 36,452).

**References**

Figures 1, 2, and 3, and Table 1 are derived from ILINet sentinel surveillance data submitted by sentinel providers directly to the CDC.

Table 1 also uses data from CDC's FluView Interactive GIS application.

Figure 4 and Table 2 use ILINet laboratory surveillance data.

Figures 5, 6, 7, and Table 3 are compiled from data collected by local health authorities and abstracted from medical records.

Figures 8 and 9 are populated from the National Syndromic Surveillance System (NSSP) Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE).

Figure 10 is generated from data submitted to Nevada's NBS/NETSS reporting systems.