

# Montana Influenza Summary

Cases reported as of June 1, 2019 (MMWR Week 22)

Montana DPHHS, Communicable Disease Epidemiology

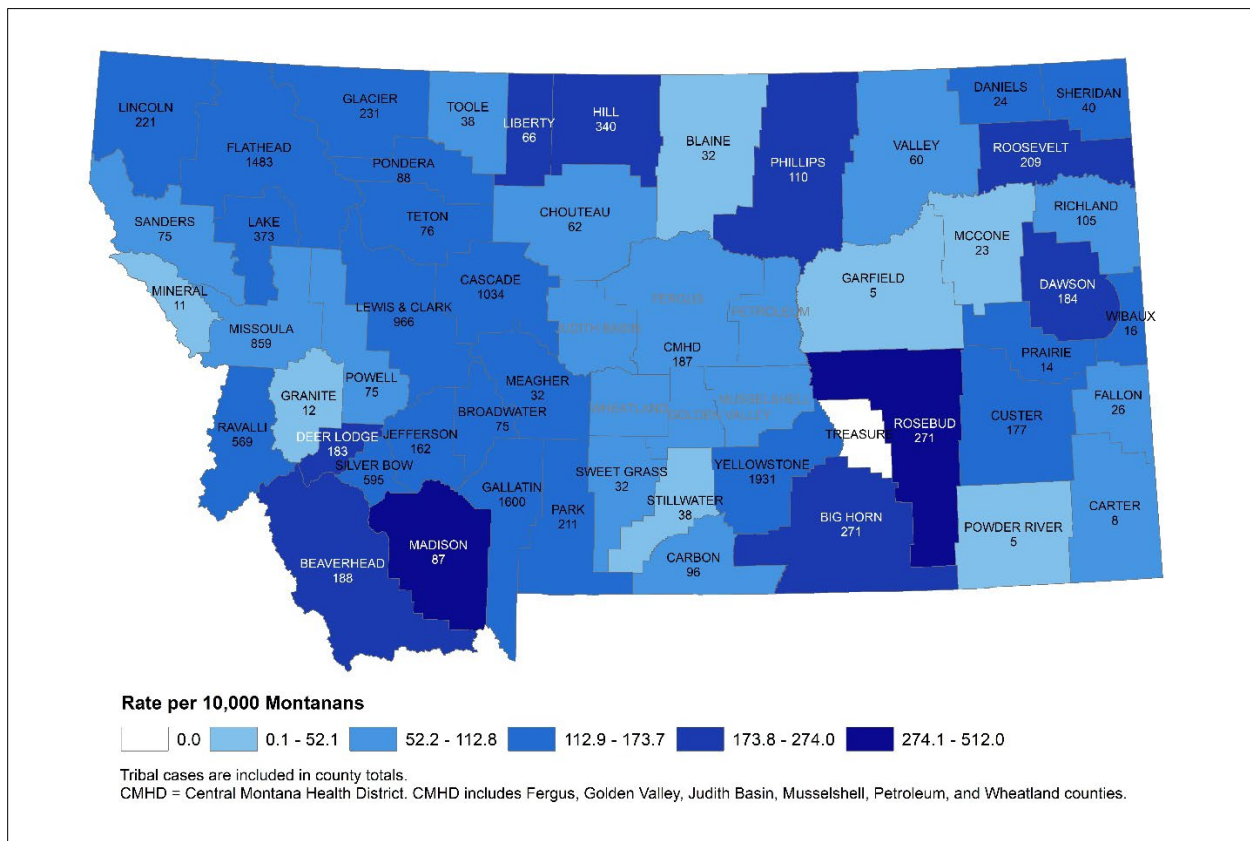


The Montana Department of Health and Human Services (DPHHS) provides a weekly report throughout the influenza season that coordinates data from a variety of sources to give the most complete and up to date view of influenza activity in the state of Montana. All data are preliminary and may change as more complete information is received.

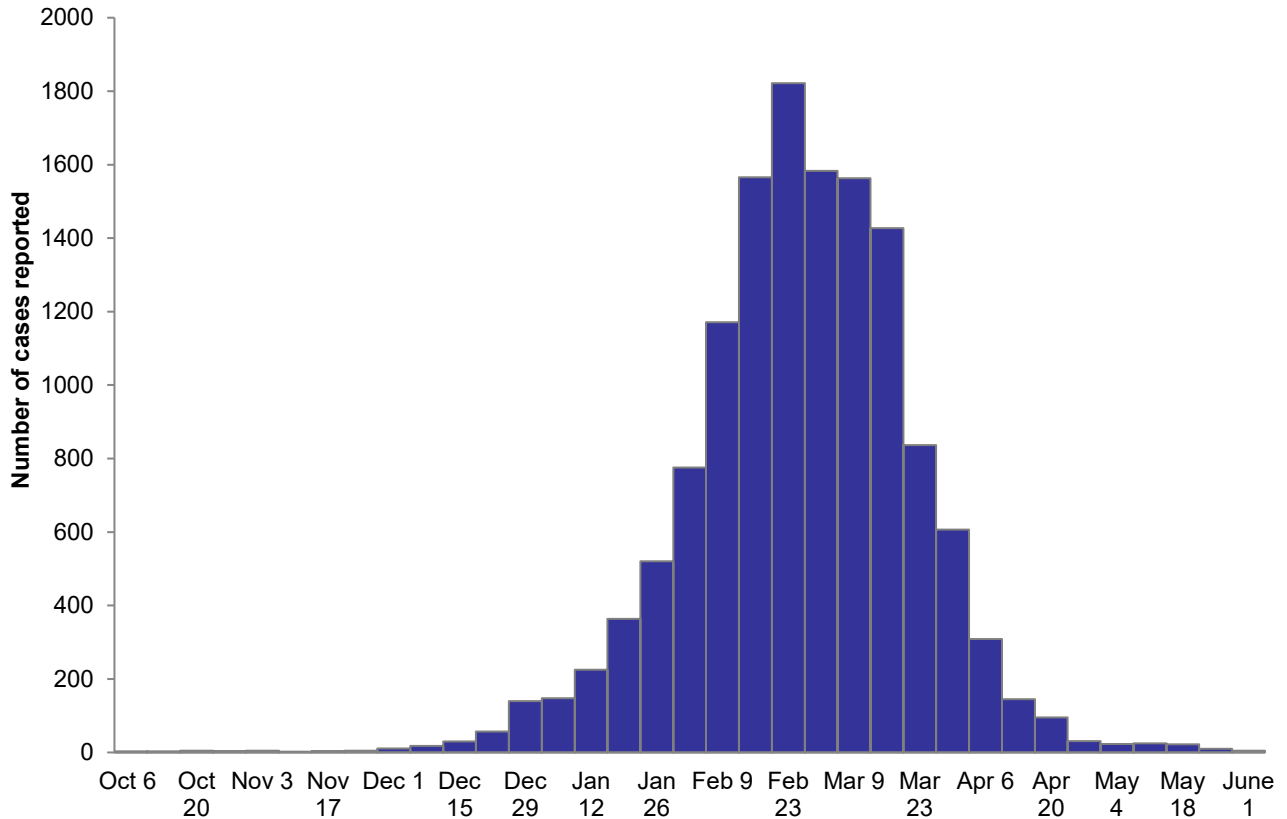
## Summary of Influenza Activity<sup>1</sup>

- During the 2018-2019 influenza season, 13,576 cases, 767 hospitalizations, and 38 deaths (1 pediatric) due to influenza were reported from all but one county in Montana. Four counties reported fewer than ten influenza cases for the entire season (range: 0–1,931). Figure 1 displays statewide influenza activity as case counts by county shaded by incidence rate per 10,000 persons.
- The most common influenza subtypes identified this season were Influenza A H1N1 (2009) and Influenza A H3N2. Only 8.6% of influenza isolates were identified as Influenza B.
- Peak influenza activity occurred during the week ending February 23, 2019 (MMWR Week 8, Figure 2).
- Thirty-three influenza outbreaks were reported to date this season; the majority in long term care facilities and schools.

**Figure 1. Number and incidence rate of reported influenza cases by county of residence – Montana, 2018-2019 season**



**Figure 2. Influenza cases reported by week – Montana, 2018-2019 season**

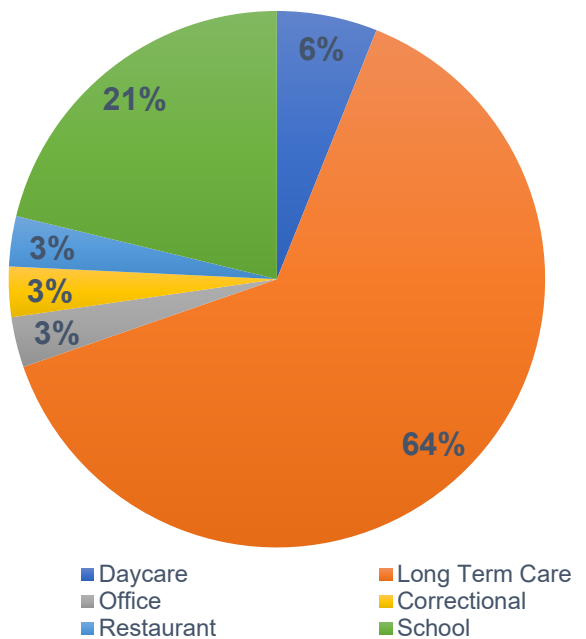


### Influenza Outbreaks

Outbreaks in a congregate setting are reportable to DPHHS by Administrative Rule (ARM). An outbreak is defined as “an incidence of a disease or infection significantly exceeding the incidence normally observed in a population of people over a period of time specific to the disease or infection in question” ([ARM 34.114.101 \(24\)](#)).

A total of 33 outbreaks were reported from 19 counties during the 2018-2019 influenza season. A total of 515 cases, 21 hospitalizations, and 2 deaths resulted. All outbreaks were confirmed as influenza A. The most common settings were long term care facilities and schools (Figure 3). Control measures were implemented within two days in 82% of identified outbreaks.

**Figure 3. Influenza outbreaks by setting – Montana 2018-19 season**

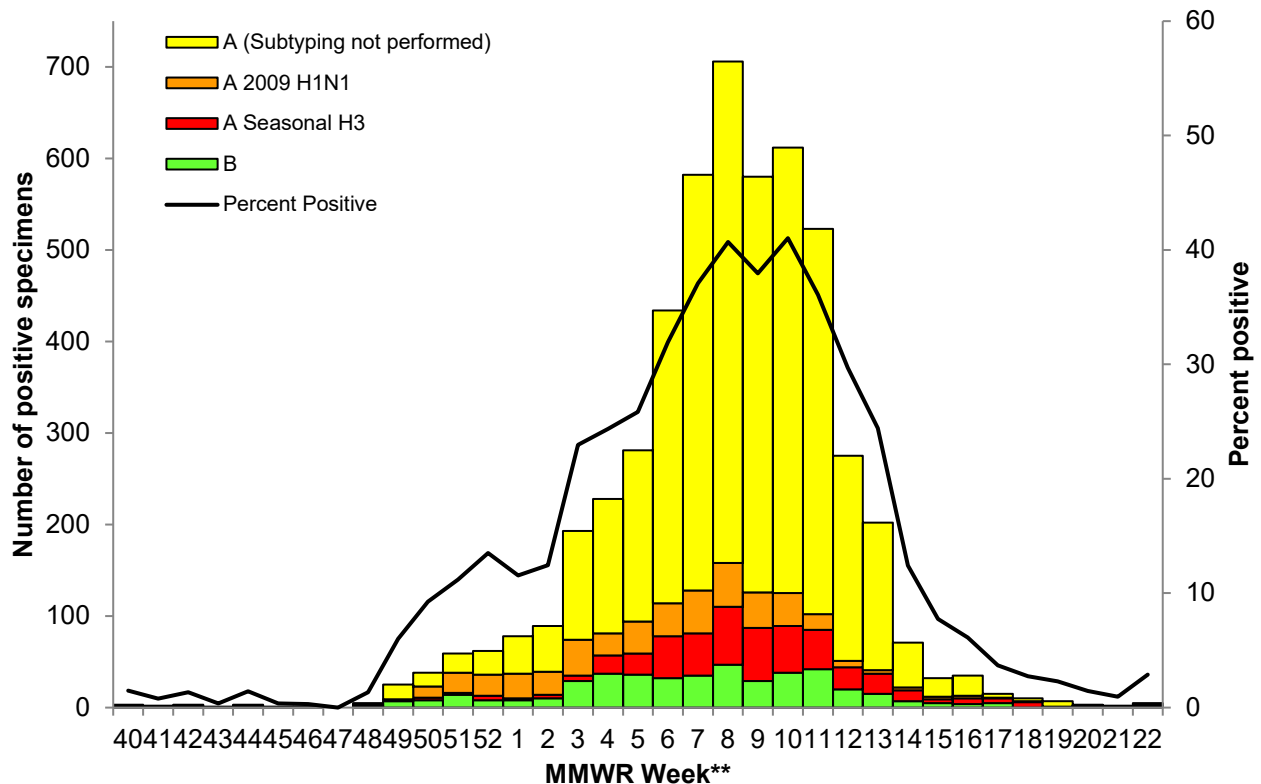


## Laboratory Surveillance

The Montana Public Health Laboratory (MTPHL) and partners report the number of specimens tested for influenza by Polymerase Chain Reaction (PCR) as well as the number of positives by influenza virus type and influenza A virus subtype. The table presented below contains data for the 2018-2019 season. The most common subtype identified during this season was influenza A H1N1 (2009), followed by a second wave of influenza A H3. Influenza B was identified in 8.6% of all positive specimens, which is less than what is typically observed during an average influenza season (15%).

| Table 1. Influenza type confirmed by Montana Public Health Laboratory and partners <sup>2</sup> |             |
|---|-------------|
| Number of specimens tested  | 22,607      |
| Number of positive specimens (%)  | 5,171(22.9) |
| Positive specimens by type/subtype  |             |
| Influenza A (%)   | 4,724       |
| 2009 H1N1   | 460         |
| H3  | 458         |
| Subtyping not performed   | 3,801       |
| Influenza B (%)   | 447         |

Figure 4. Influenza positive tests reported by the Montana Public Health Laboratory and partners, 2018-2019 season



\*\*The MMWR week is the week of the epidemiologic year for which the National Notifiable Diseases Surveillance System (NNDSS) disease report is assigned by the reporting local or state health department for the purposes of MMWR disease incidence reporting and publishing. Values for MMWR week range from 1 to 53, although most years consist of 52 weeks.

## Hospitalizations and deaths

Influenza cases, including hospitalizations and deaths, are reportable to local public health in Montana<sup>3</sup>. Since September 1, 2019, 767 influenza-associated hospitalizations have been reported, with a cumulative rate (all ages) of 74.1 per 100,000 population (Figures 4-5). An influenza related death is included in season totals when it is reported to DPHHS or if influenza is indicated on a death record. Season to date, there have been 38 deaths attributed to influenza, including one pediatric death (<18 years). Table 2 presents influenza hospitalizations and deaths for the 2018-2019 influenza season.

| Table 2. Influenza Hospitalizations and deaths – Montana, 2018-2019 season |                        |                 |                 |
|--|------------------------|-----------------|-----------------|
| Hospitalizations   | Deaths                 |                 |                 |
|  | Pediatric (0-17 years) | Adult <65 years | Adult >65 years |
| 767  | 1                      | 10              | 27              |

Figure 4. Influenza-associated hospitalizations by age group and percentage of emergency room outpatient visits due to ILI – Montana, 2018-19 season

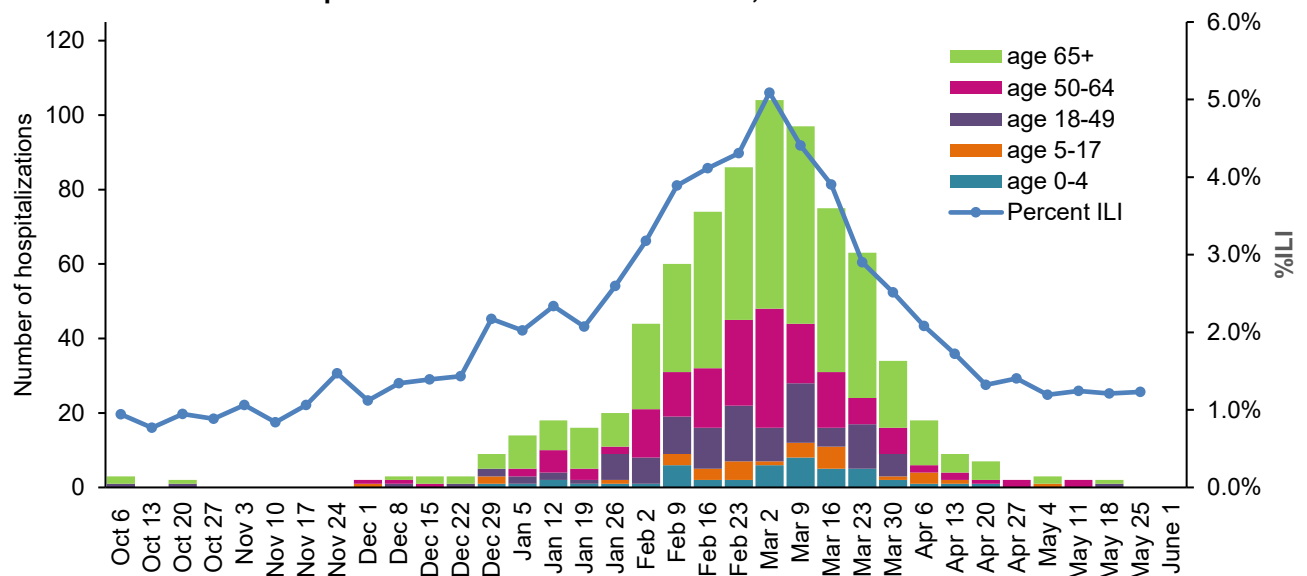
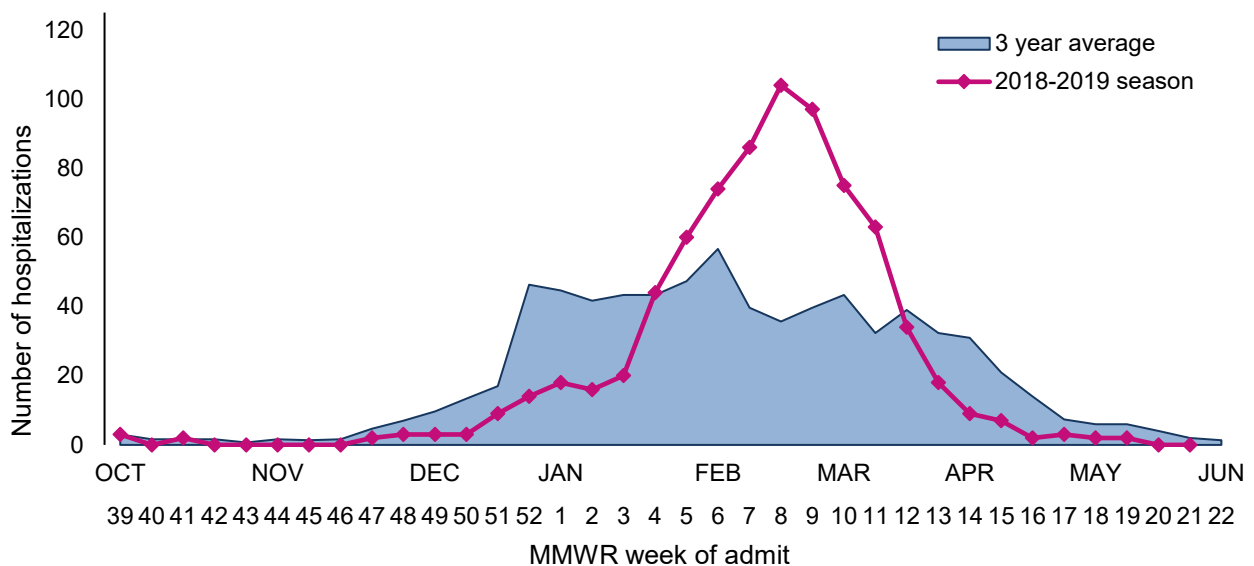
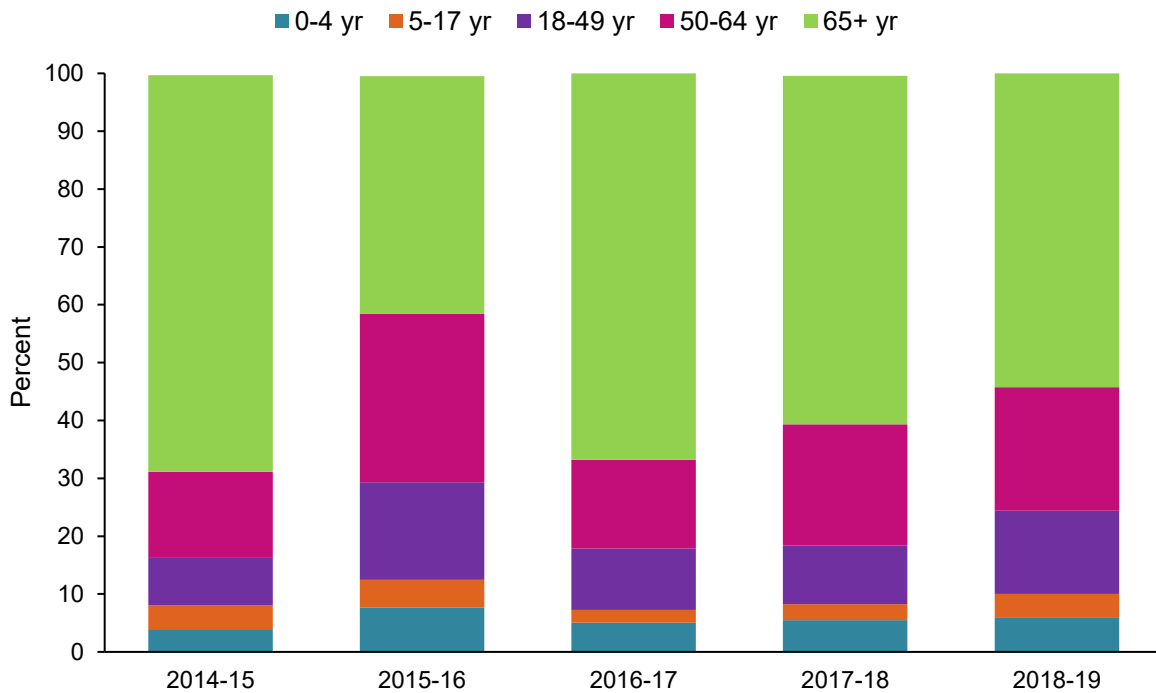


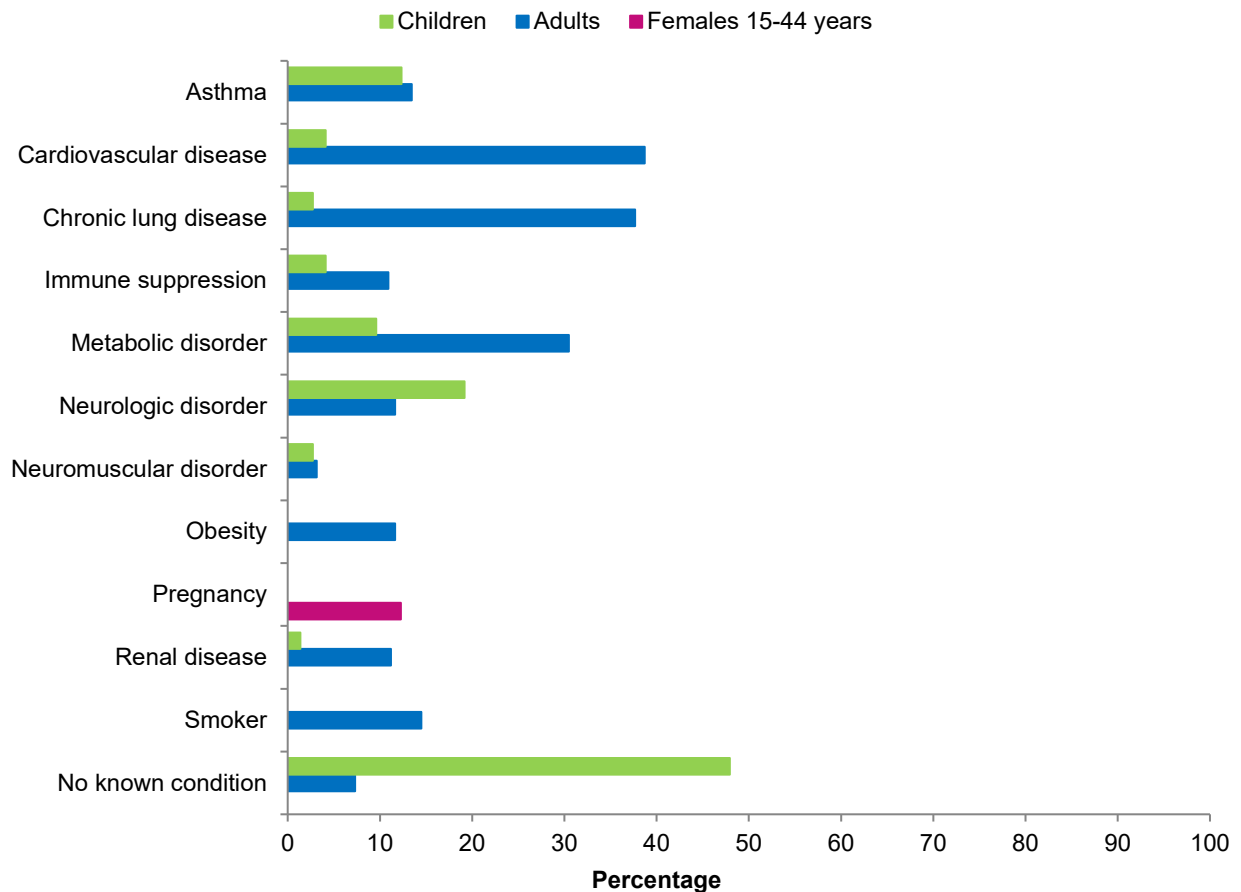
Figure 5. Number of influenza-related hospitalizations (all ages) – Montana, 2018-19 season vs. 3-year average



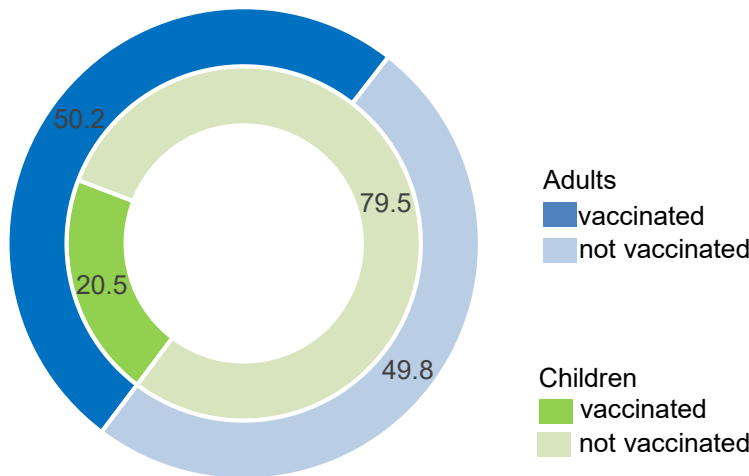
**Figure 6. Influenza hospitalizations by age group – Montana, current and previous 4 seasons**



**Figure 7. Selected underlying conditions of hospitalized individuals – Montana, 2018-2019 season<sup>4</sup>**



**Figure 8. Influenza vaccination status of hospitalized children and adults with at least one comorbidity – Montana, 2018-2019 season**

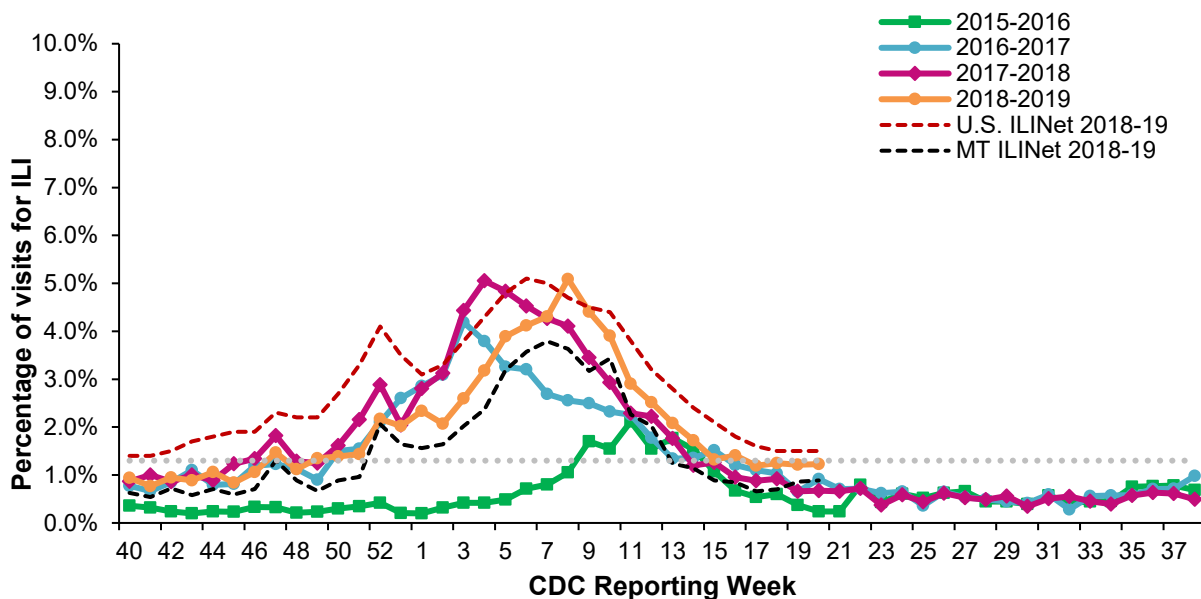


**Influenza like Illness Network (ILINet) and Syndromic Surveillance**

The U.S. Outpatient ILI Surveillance Network (ILINet) is a national system that conducts surveillance for Influenza-like illness (ILI) in outpatient healthcare facilities. ILI has a standardized definition which includes a fever (temperature of 100° F or greater), cough, and/or sore throat. Currently, 36 facilities participate in ILINet in Montana either through manual data entry or through the syndromic surveillance data feed. Syndromic surveillance data in Montana is analyzed in ESSENCE, which collects real-time emergency department (ED) chief complaint data from 35 facilities, encompassing 89% of ED visits across Montana. Figure 8 below shows the proportion of medical visits with a chief complaint of ILI each week for the current as well as past three seasons and presented alongside the U.S. and MT ILINet values.

For the 2018-2019 influenza season, the percentage of patient visits were due to ILI in Montana was similar to that of the United States, with peak influenza activity occurring the week ending February 23, 2019 (Figure 9).

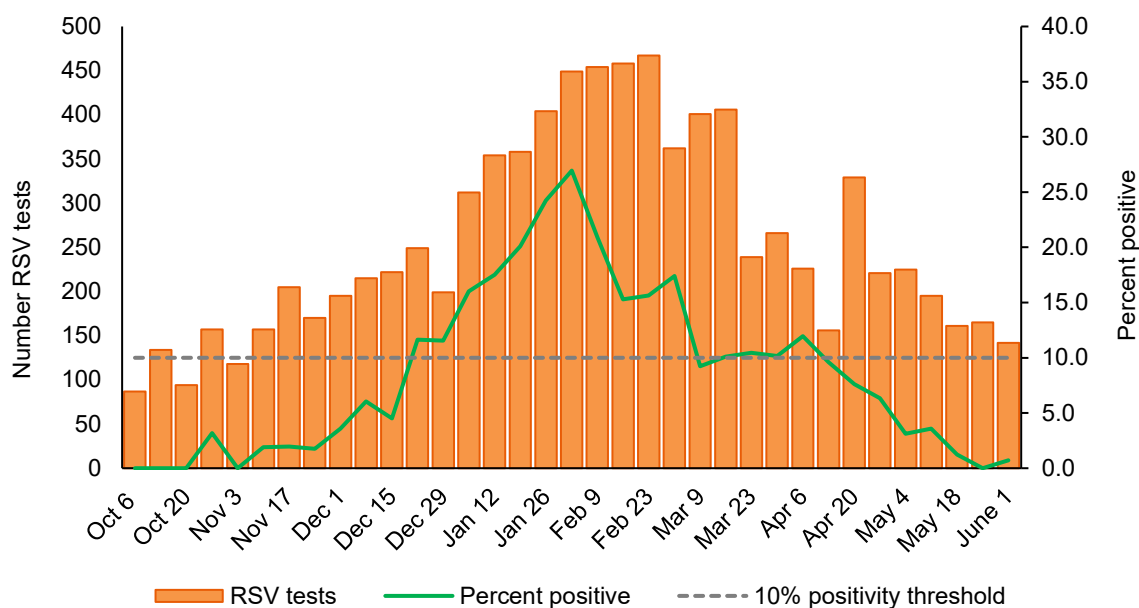
**Figure 9. Percentage of ER visits for chief complaint of ILI – Montana, selected seasons**



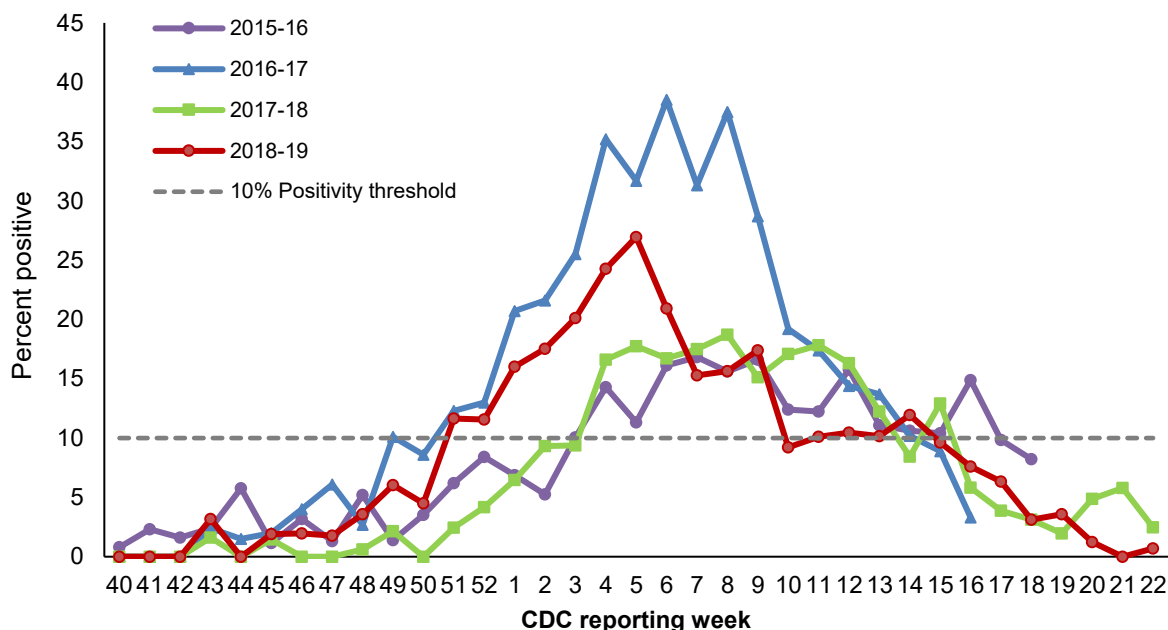
## Respiratory Syncytial Virus (RSV)

RSV is a respiratory virus and is the most common cause of bronchiolitis and pneumonia in children less than one year of age. Typically, the RSV season tends to mirror that of influenza. RSV surveillance is compiled from 15 sentinel laboratories in Montana that report weekly testing data<sup>4</sup>. Figures 10 and 11 describe RSV testing for the current season and a comparison of the percent positivity over the current and last three seasons, respectively. **The 2018-2019 RSV season onset was week ending December 15, 2018 and offset was week ending April 20, 2019.**

**Figure 10. Number and percent positive RSV tests – Montana, 2018-2019**



**Figure 11. RSV positivity rates – Montana, select seasons**



## Additional Resources

Montana DPHHS Influenza: <http://dphhs.mt.gov/publichealth/cdepi/diseases/influenza>

National Influenza Surveillance Report (CDC Flu View): <https://www.cdc.gov/flu/weekly/>

International Influenza Data: <http://www.who.int/influenza/en/>

Influenza vaccine resources: visit <https://vaccinefinder.org> or [www.cdc.gov/flu](http://www.cdc.gov/flu) to find a location near you where you can get vaccinated.

## Notes

**<sup>1</sup>Influenza Activity:** State health departments report the estimated level of geographic spread of influenza activity in their states each week through the **State and Territorial Epidemiologists Reports**. States report geographic spread of influenza activity as no activity, sporadic, local, regional, or widespread. These levels are defined as follows:

- **No Activity:** No laboratory-confirmed cases of influenza and no reported increase in the number of cases of ILI.
- **Sporadic:** Small numbers of laboratory-confirmed influenza cases or a single laboratory-confirmed influenza outbreak has been reported, but there is no increase in cases of ILI.
- **Local:** Outbreaks of influenza or increases in ILI cases and recent laboratory-confirmed influenza in a single region of the state.
- **Regional:** Outbreaks of influenza or increases in ILI and recent laboratory confirmed influenza in at least two but less than half the regions of the state with recent laboratory evidence of influenza in those regions.
- **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.

**<sup>2</sup>Molecular influenza testing partner laboratories:** Benefis Healthcare System, Bighorn County Hospital, Billings Clinic Hospital, Bozeman Health, Community Medical Center, Deer Lodge Medical Center, Glacier Medical Associates, Grant Creek Family Practice, Great Falls Clinic, Holy Rosary Health Care, Kalispell Regional Medical Center, Liberty County Hospital, North Valley Hospital, Poplar Community Hospital, St. Joseph Hospital, St. Patrick's Hospital, St. Peter's Health, St. Vincent Hospital, Sidney Health Center, Trinity Hospital, and VA Ft. Harrison.

**<sup>3</sup>Per the Administrative Rules of Montana [37.114.203](#) and [37.114.316](#), influenza is a reportable condition for the following:**

- Influenza cases, hospitalizations, and deaths
- Influenza outbreaks in congregate settings
- Other illnesses of public health significance (novel influenza A)

**<sup>4</sup>Comorbidity** categories are defined as:

Cardiovascular diseases: include conditions such as coronary heart disease, cardiac valve disorders, congestive heart failure, and pulmonary hypertension; does not include isolated hypertension.

Chronic lung diseases: include conditions such as asthma, chronic obstructive pulmonary disease (COPD), bronchiolitis obliterans, chronic aspiration pneumonia, and interstitial lung disease.

Immune suppression: includes conditions such as immunoglobulin deficiency, leukemia, lymphoma, HIV/AIDS, and individuals taking immunosuppressive medications.

Metabolic disorders: include conditions such as diabetes mellitus, thyroid dysfunction, adrenal insufficiency, and liver disease.

Neurologic diseases: include conditions such as seizure disorders, cerebral palsy, and cognitive dysfunction.

Neuromuscular diseases: include conditions such as multiple sclerosis and muscular dystrophy.

Obesity: assigned if indicated in the hospitalization report.

Pregnancy: percentage calculated using number of female cases aged between 15 and 44 years of age as the denominator.



Renal diseases: include conditions such as acute or chronic renal failure, nephrotic syndrome, glomerulonephritis, and impaired creatinine clearance.

Smoker: assigned if current smoking status was indicated in the hospitalization report.

No known condition: indicates that the patient did not have any known underlying medical condition indicated at the time of hospitalization.

**<sup>5</sup>RSV laboratory surveillance partners**: Benefis Healthcare System, Bighorn County Hospital, Billings Clinic Hospital, Bozeman Health, Community Medical Center, Deer Lodge Medical Center, Great Falls Clinic, Holy Rosary Health Care, Kalispell Regional Medical Center, Liberty County Hospital, Poplar Community Hospital, St. Peter's Health, St. Vincent Hospital, Sidney Health Center, and Trinity Hospital.

*For additional information on influenza activity in Montana, please contact your local health department or the Department of Public Health and Human Services' Communicable Disease Epidemiology Section at (406) 444-0273 or visit <https://dphhs.mt.gov/publichealth/cdepi/diseases/influenza>.*