



Salt Lake County Annual Influenza Report

2021-22 Season

Epidemiology Bureau

Introduction

The 2021-22 influenza season saw 420 confirmed influenza-associated hospitalizations reported from October 1, 2021 to April 30, 2022. The 2021-22 season was quite distinct, as hospitalizations hit slightly later, and continued much later than a typical flu season (which is exemplified in Figure 1 below). For this reason, the Centers for Disease Control and Prevention (CDC) extended their influenza surveillance time frame from its typical ending point of April 30th to June 11th. Salt Lake County followed suit, finding an additional 42 hospitalizations during this time frame. The predominant influenza subtype circulating during the season was AH3. The subsequent graphs and charts will examine the standard influenza season from October 1 to April 30 so it can be compared to historic data, with the exception of page 13 which examines the extended season cases.

Figure 1

Hospitalized Case Comparison to the Five Year Average, Salt Lake County, 2021-2022 Season

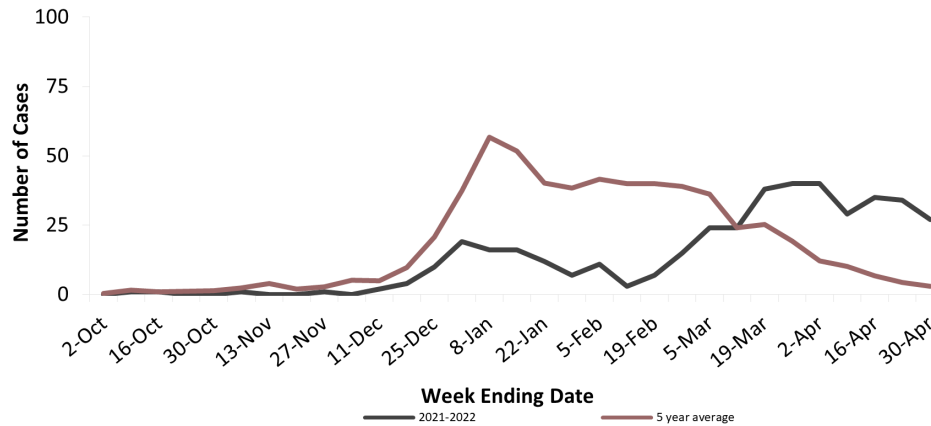
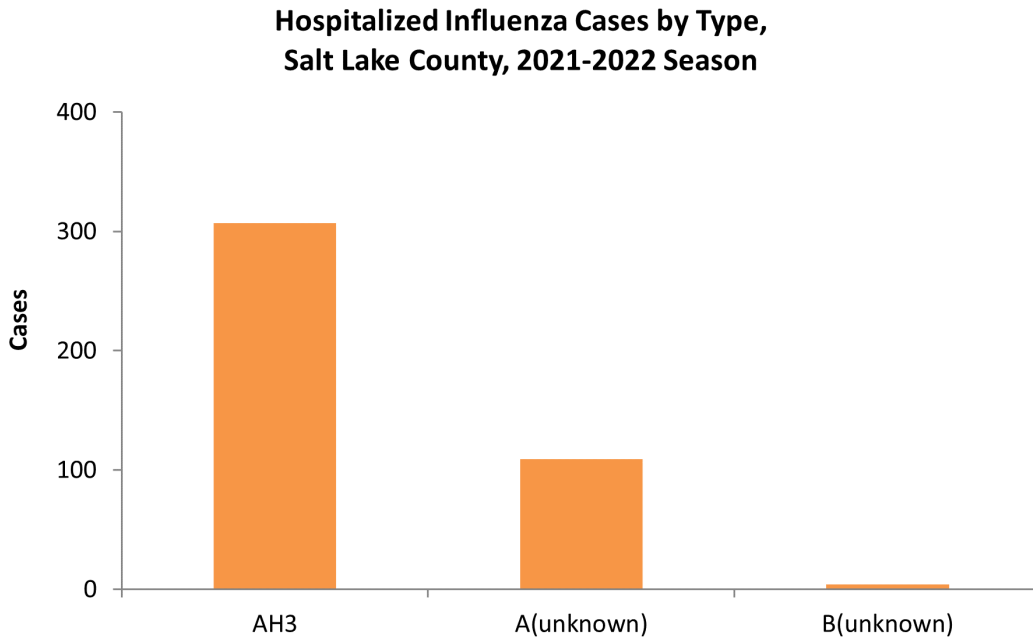


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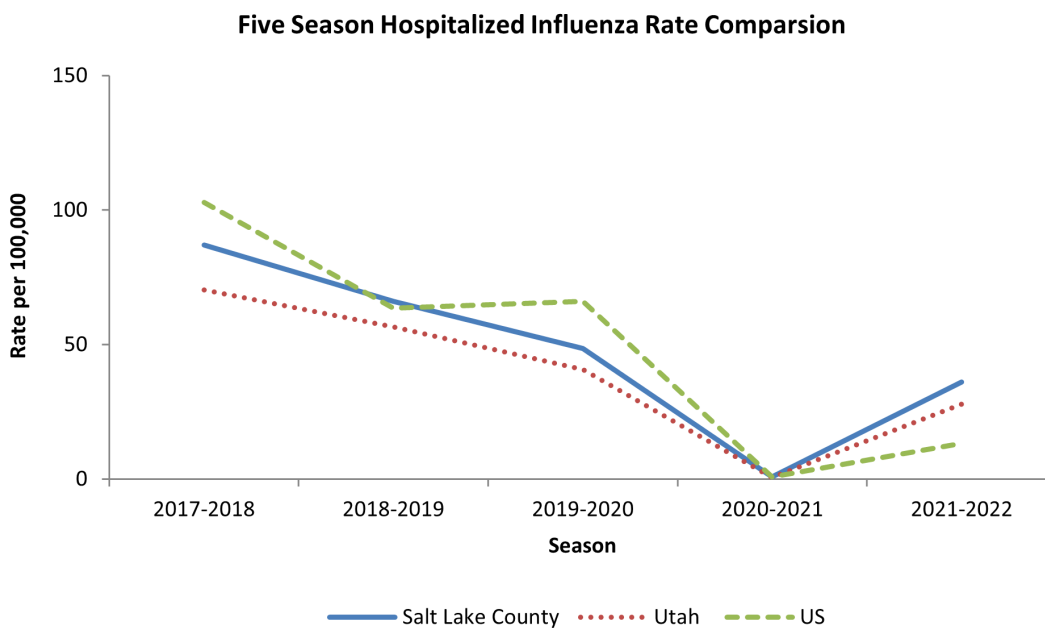
Figure 2 displays the number of hospitalized cases by influenza type, with AH3 having the highest case count at 307 cases.

Figure 2



When compared to influenza rates for Utah and the United States, the Salt Lake County rate was higher than the national rate and higher than the rate statewide for the 2021-22 season. Salt Lake County’s hospitalized influenza rate was 36 per 100,000 population, compared with Utah at 28 and the national rate of 13 per 100,000 population. Figure 3 displays a five season comparison between Salt Lake County, Utah and the United States.

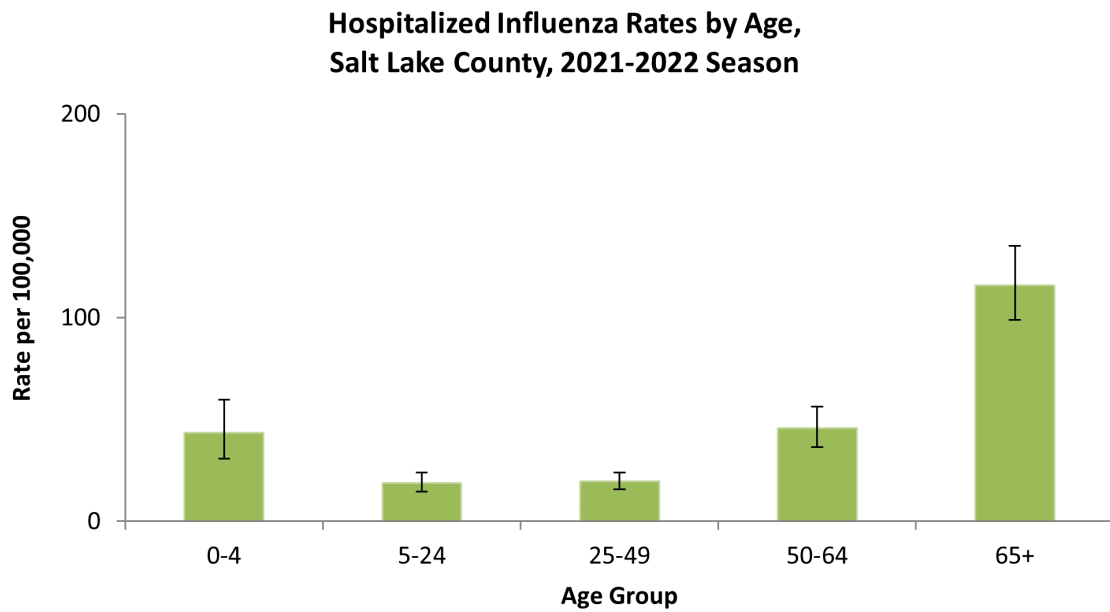
Figure 3



Demographic Profile

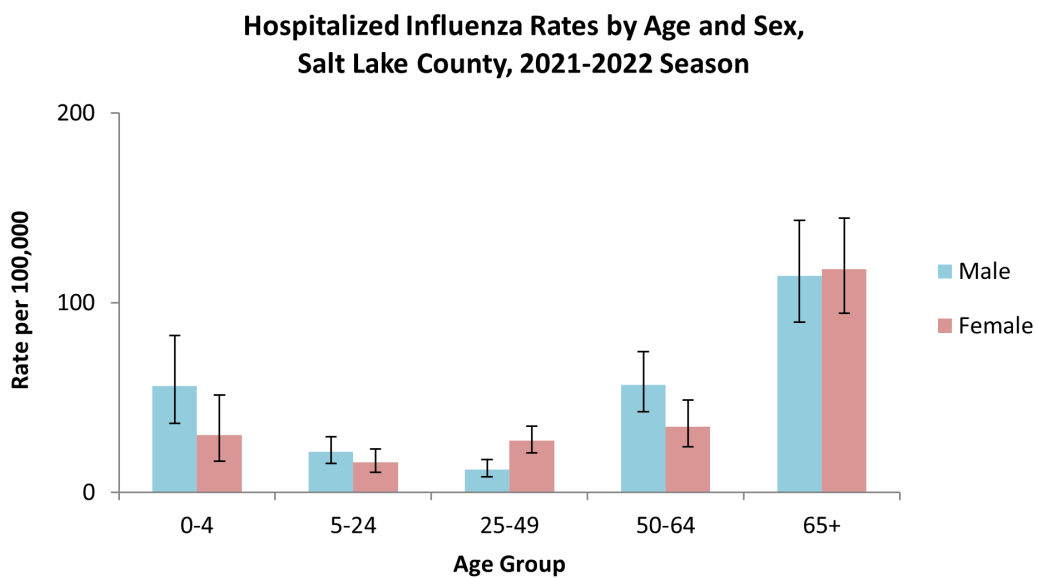
The 65+ age group was disproportionately affected by influenza compared to all other age groups, with a rate of 116 per 100,000 population. The lowest rate was among the 5-24 age group at 19 per 100,000 population. See figure 4.

Figure 4



When looking at age and sex, the 25-49 age group is the only age group with a significant difference in rates between males and females with a rate in males of 12 per 100,000 population and a rate of 27 per 100,000 population in females. The highest rates were among both males and females over the age of 65 at 114 per 100,000 and 118 per 100,000 respectively. See figure 5.

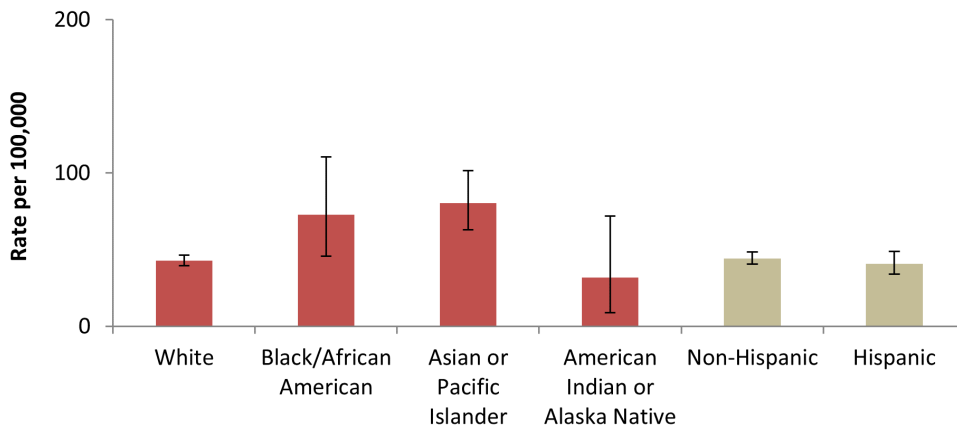
Figure 5



Statistically significant differences were identified between the White and Asian or Pacific Islander populations and between White and Black/African American populations. This means that Asian or Pacific Islanders and Black/African Americans were disproportionately hospitalized for influenza compared to Whites. Both the Asian or Pacific Islander population and the Black/African American population saw a rate of 71 hospitalizations per 100,000 population where the White population had a rate of 30 per 100,000 population. There was not a significant difference in rates between Hispanic and non-Hispanic populations. See figure 6.

Figure 6

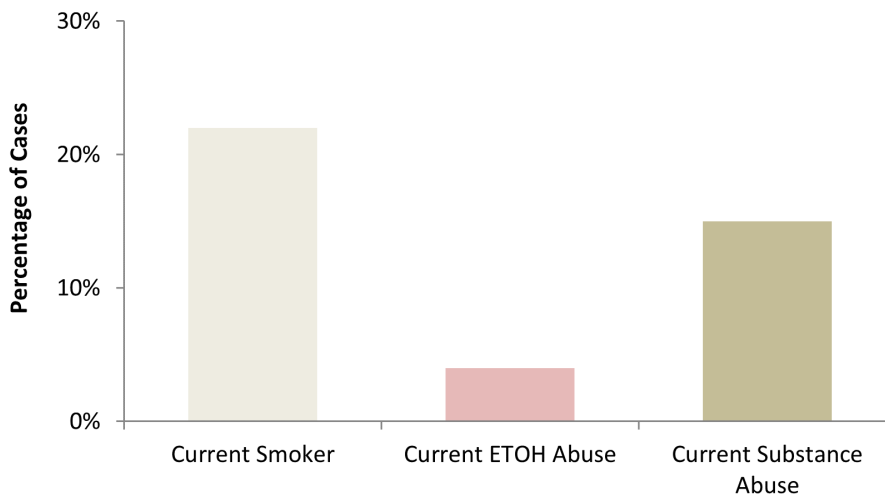
**Hospitalized Influenza Rates by Race & Ethnicity,
Salt Lake County, 2021-2022 Season**



Behavioral risk factors were analyzed to identify additional conditions that may contribute to hospitalization due to influenza. Smoking was the highest risk factor, with 22% of hospitalized cases reporting current smoking habits. See figure 7.

Figure 7

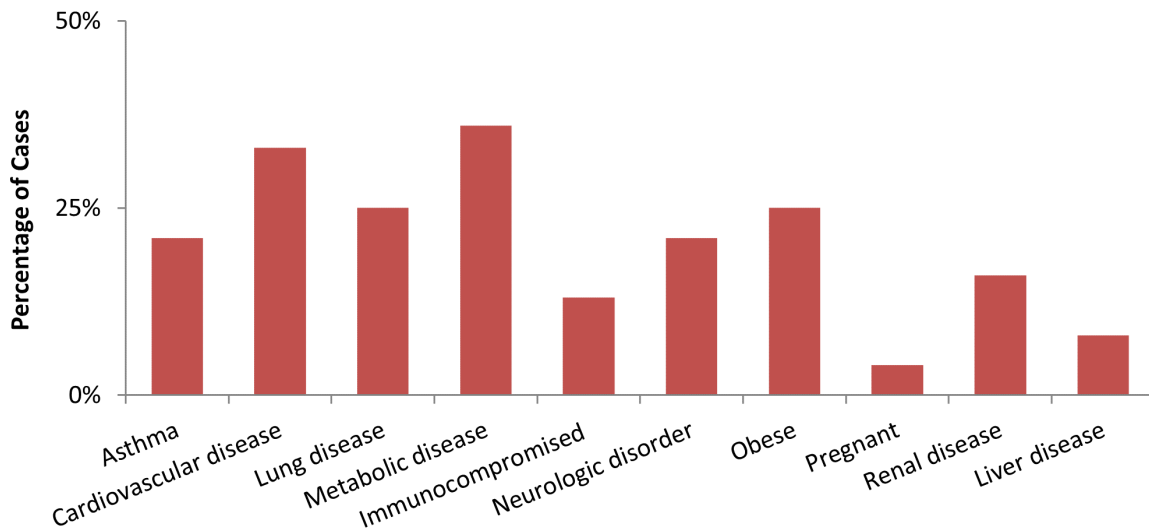
**Behavioral Risk Factors Among Hospitalized Influenza
Cases, Salt Lake County, 2021-2022 Season**



Salt Lake County influenza cases had a variety of underlying conditions upon hospitalization. The most common conditions among cases were metabolic disease, cardiovascular disease, lung disease and obesity, with 36% of cases having some form of metabolic disease, 33% of cases having some form of cardiovascular disease and 25% having lung disease or being obese . Figure 8 displays the percent of cases affected by a range of underlying conditions.

Figure 8

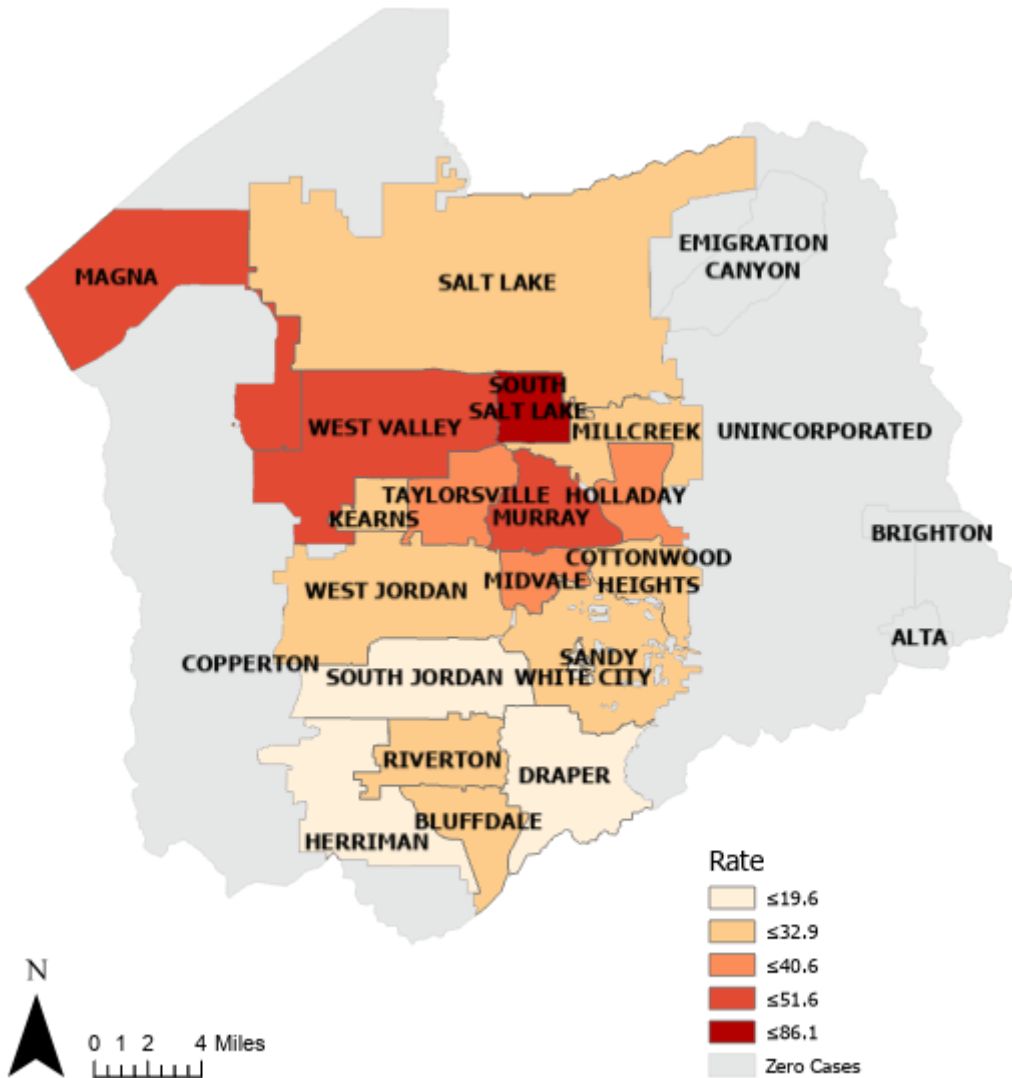
Underlying Medical Conditions Among Hospitalized Influenza Cases, Salt Lake County, 2021-2022 Season



2021-2022 Influenza Season: Influenza-associated Hospitalizations in Salt Lake County (per 100,000)

Figure 9 shows the rate of hospitalized-associated influenza cases per 100,000 population by city within Salt Lake County. South Salt Lake, Magna, West Valley and Murray saw the greatest burden of influenza.

Figure 9



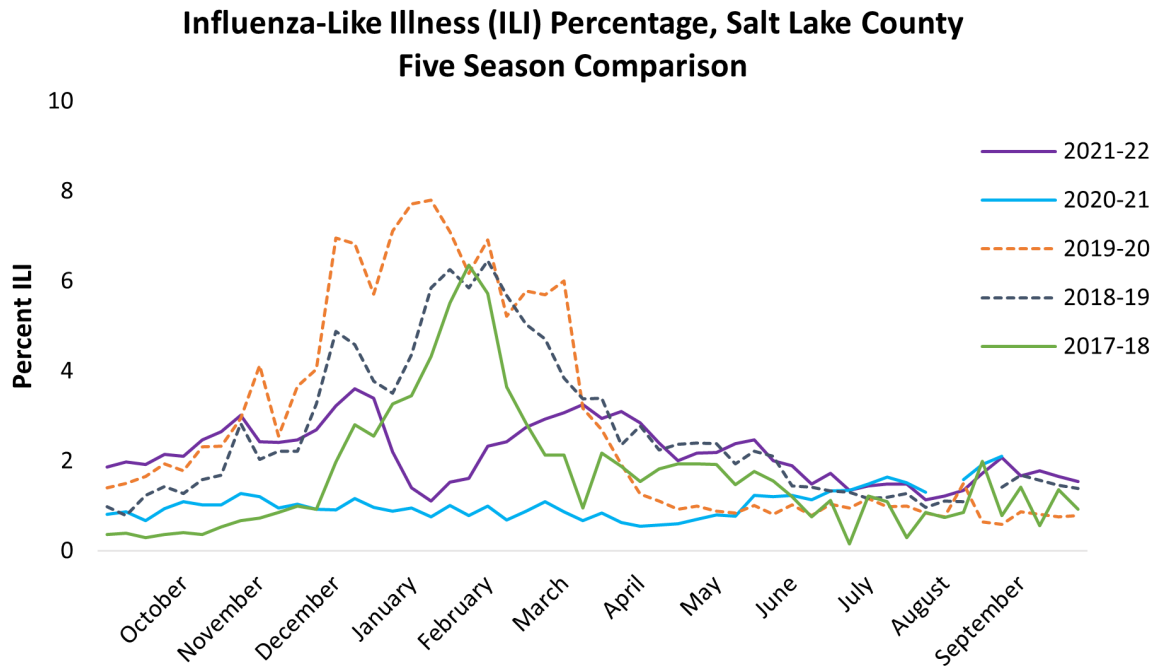
*Rate for Unincorporated areas of Salt Lake County is 18.6 – not shown on map

*Rates calculated using ESRI 2022 municipality population estimates

Outpatient Surveillance

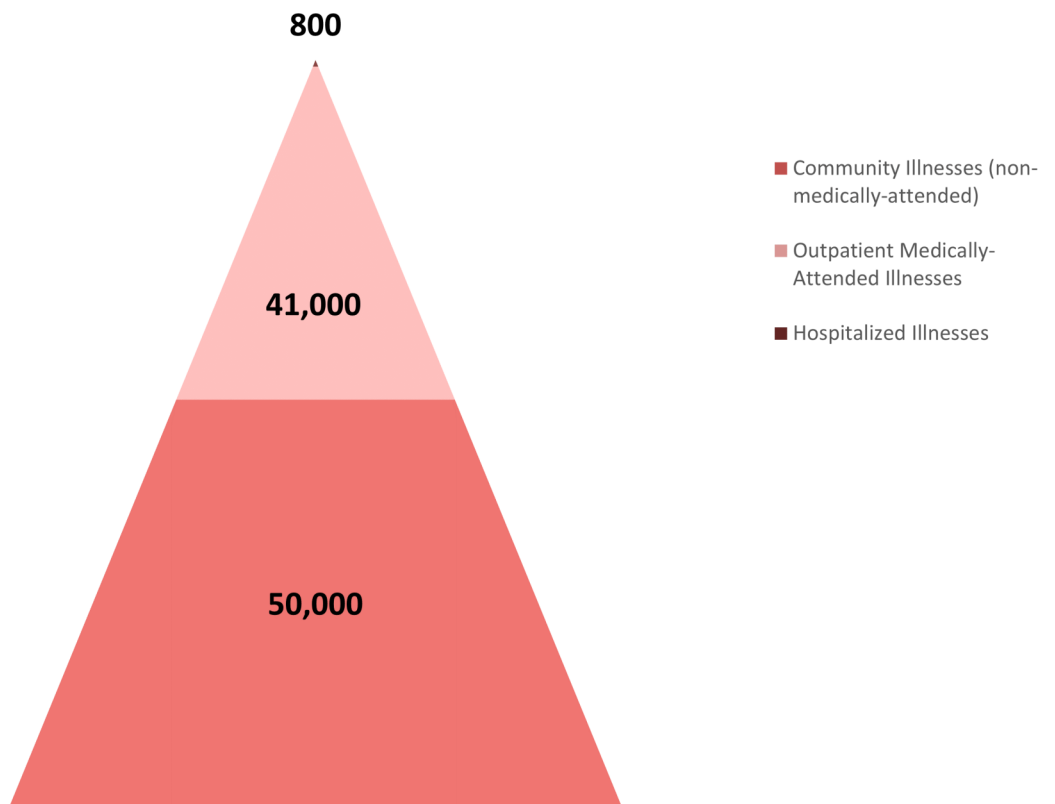
Outpatient influenza surveillance is an integral component to tracking influenza trends in Salt Lake County. Influenza-like illness (ILI) surveillance is one such tool used to monitor influenza patterns. Figure 10 shows a five season comparison of ILI trends, with the 2021-22 season following a rather distinct pattern. You can see a peak in early January as well as another in early April with a slow decrease after that point. We see a trough in ILI where most previous seasons peaked (other than the very low ILI 20-21 season), exemplifying the unusual season pattern.

Figure 10



Below is a model that assesses influenza burden throughout Salt Lake County by accounting for the underreporting of hospitalized influenza cases. By accounting for this underreporting, the model allows for the projection of how many cases of influenza were attended to in an outpatient clinic and how many individuals were sick with influenza in Salt Lake County but never received medical care. During the 2021-22 season in Salt Lake County, it is projected that 800 cases may have been hospitalized, 41,000 residents may have been sick with influenza and sought medical care and 50,000 residents may have been sick with influenza and did not seek care. See figure 11.

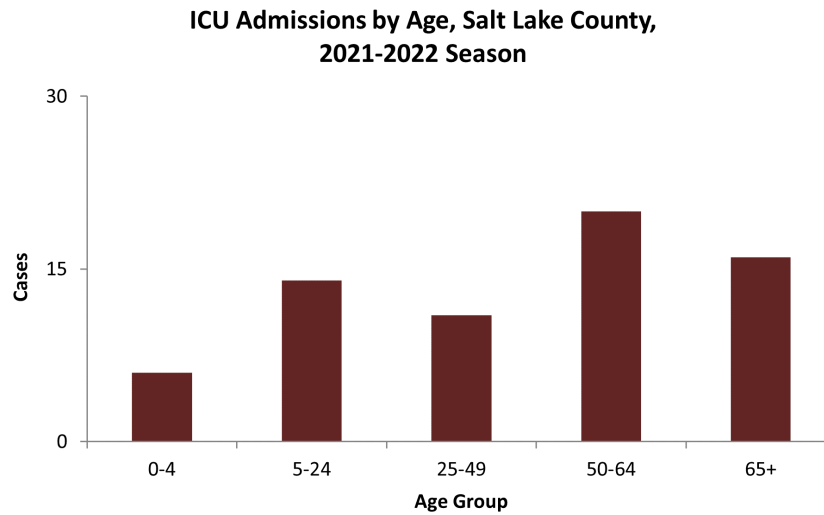
Figure 11



Severity

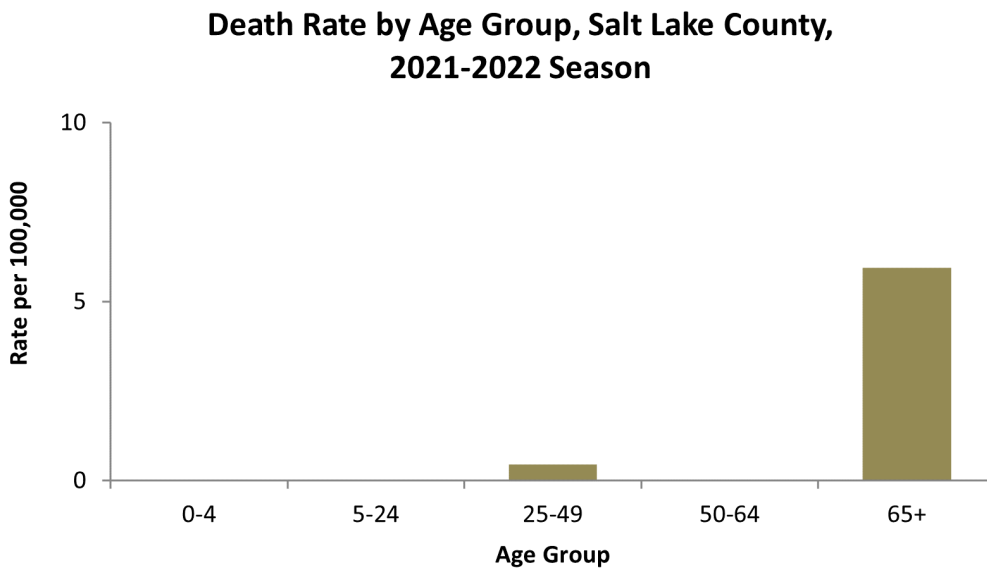
Sixteen percent of hospitalized influenza cases during the 2021-22 season were admitted to an intensive care unit (ICU). This is lower than what's been seen in recent seasons. The 50-64 age group had the highest number of cases admitted to an ICU. Figure 12 shows the ICU distribution by age among all hospitalized cases.

Figure 12



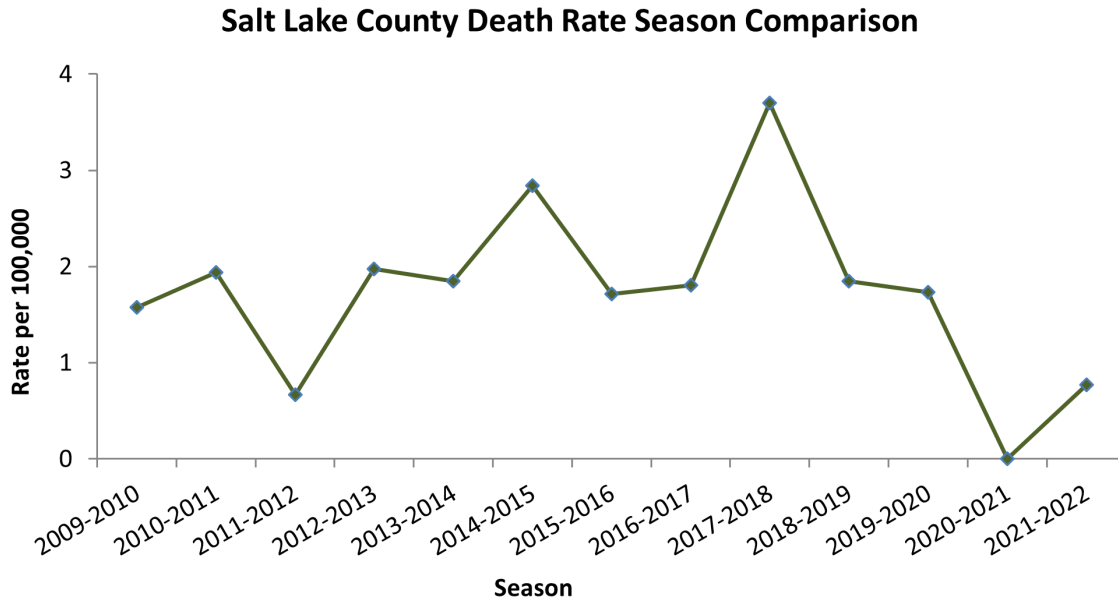
There were 10 influenza-related deaths during the 2021-22 season. The highest death rate was among the 65+ age group with 6 per 100,000 population. No deaths were seen among the 0-4, 5-24 and 50-64 age groups. Figure 13 displays the death rates that occurred by age.

Figure 13



When looking at a multi-season comparison, the 2021-22 season death rate was lower than the average season. See figure 14.

Figure 14



Severity thresholds assess the severity of an influenza season, by categorizing a season as low, moderate, high and very high severity. Severity in Salt Lake County is assessed real-time and an overall seasonal assessment is provided at the end of the season. Immediate assessments allow for situational awareness and planning in real-time compared to other modalities of influenza reporting. This allows the Salt Lake County Health Department to communicate with community partners in order to assist in planning and allocating resources in the midst of the season.

According to both the Salt Lake County and CDC’s United States severity thresholds, the 2021-22 season was categorized as a **low** severity season. (Utah assessments are not available yet for the 2019-20 through 2021-22 seasons). Table 1 displays a comparison of the overall severity for the past six seasons in Salt Lake County, Utah and the United States. See table 1.

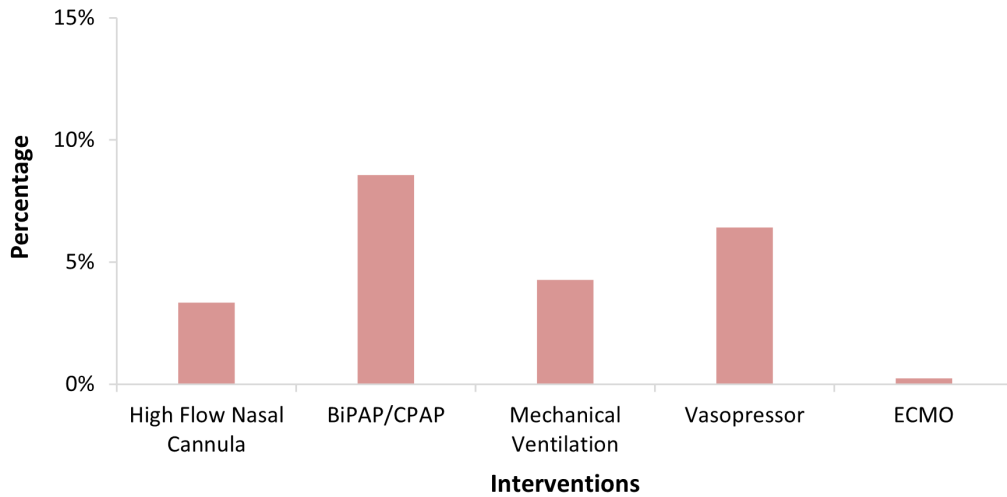
Table 1

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22
Salt Lake County	Moderate	High	Moderate	Moderate	Low	Low
Utah	Moderate	High	High	N/A	N/A	N/A
United States	Moderate	High	Moderate	Moderate	Low	Low

Figure 15 displays a variety of interventions that occurred during hospitalization that indicate disease severity. The most frequent intervention was receiving BiPAP/CPAP support, with 9% of hospitalized influenza patients receiving BiPAP/CPAP support in the emergency department or upon admission.

Figure 15

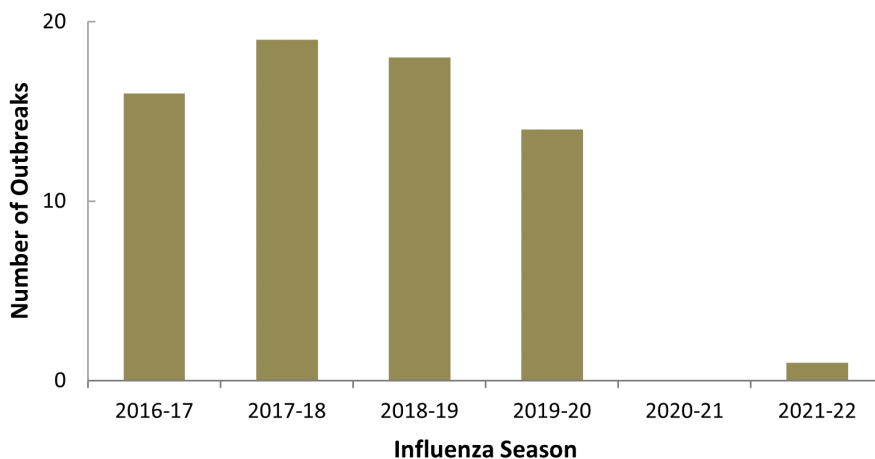
Interventions Received by Hospitalized Influenza Patients During Admission, Salt Lake County, 2021-2022 Season



In contrast to previous seasons, only one facility reported experiencing an influenza outbreak. This outbreak was at a Long-Term Care Facility that had 18 ill residents and 10 ill staff. The facility was educated about proper hygiene, disinfection and the importance of vaccination. Fewer outbreaks may have been seen since the 2020-21 season due to increased awareness and precautions implemented during the SARS-CoV-2 pandemic. Figure 16 shows the number of outbreaks reported to or identified by Salt Lake County in each respective influenza season over the past 6 seasons.

Figure 16

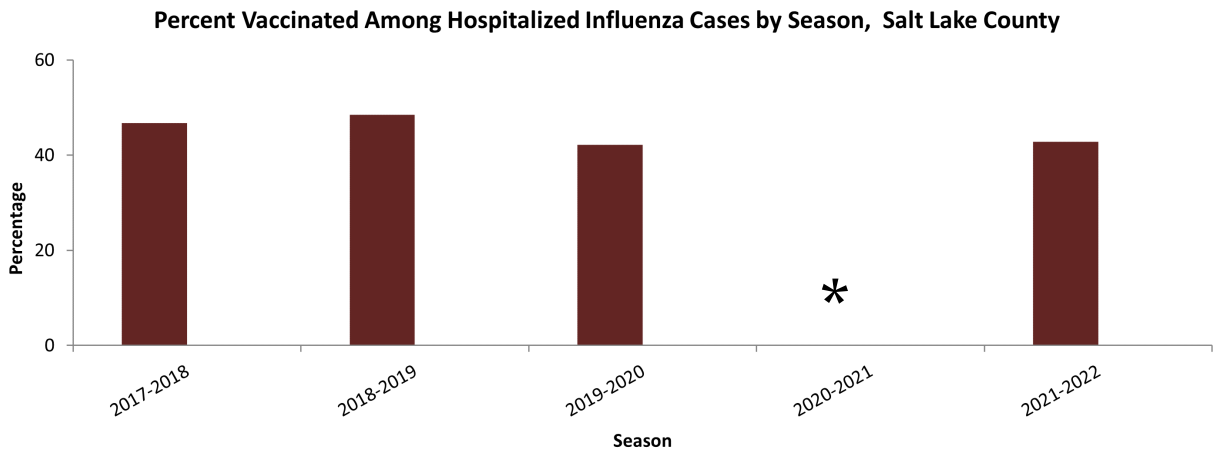
Influenza Outbreaks by Season, Salt Lake County



Vaccine

A five season comparison shows that the percent vaccinated has remained fairly steady over the past five seasons. The 2019-20 season saw a slight dip in vaccination coverage, with 2021-22 rebounding to near average. Forty-three percent of cases were vaccinated during the 2021-22 season. See figure 17.

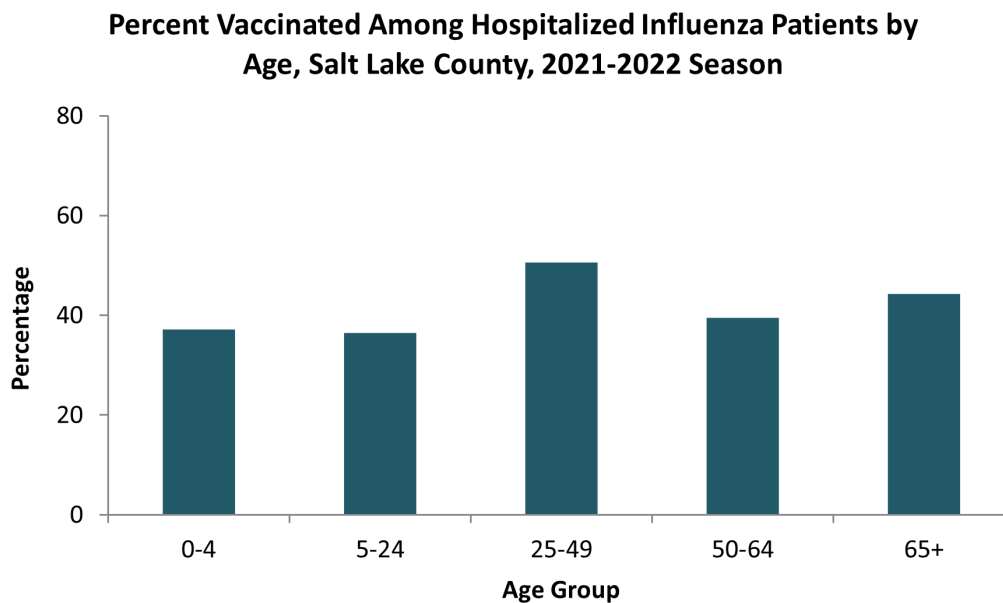
Figure 17



*2020-2021 data suppressed due to low counts

When divided by age, the 25-49 age group had the highest percent vaccinated at 51%, with the lowest vaccine coverage being seen in those aged 0-4 and 5-24 at 37% each. See figure 18.

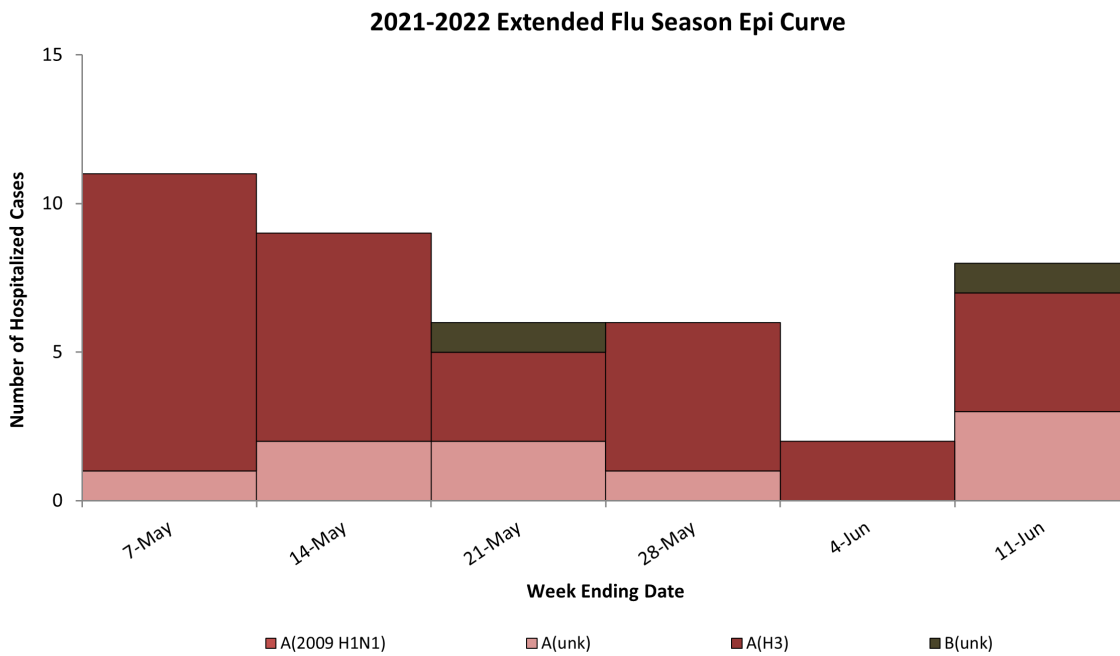
Figure 18



2021-22 Extended Season

In following the Center for Disease Control and Prevention’s lead in assessing uncharacteristically late spread of influenza, Salt Lake County extended influenza hospitalization surveillance later into the 2021-22 season. In the time between May 1, 2022 and ceasing surveillance on June 11, 2022, Salt Lake County saw an additional 42 influenza hospitalizations. The majority of these were the AH3 strain seen circulating through the rest of the season, but with a few influenza B cases trickling in towards the end of the season. See figure 19.

Figure 19



Conclusion

After historically low circulation of influenza virus in the 2020-21 season, likely due to the SARS-CoV-2 pandemic and public health measures taken, the 2021-22 season saw somewhat of a return to normal. The season did see a slightly later peak than past seasons, and had a protracted tail extending later into the spring and early summer than seen in a typical influenza season. The season was still considered a low severity season, but with indicators edging much closer to the moderate severity category than in the previous season. The 2021-22 season saw almost exclusive circulation of the AH3 strain with no AH1N1 detected and very few B viruses detected. Salt Lake County saw a much higher hospitalization rate than the United States as a whole.

Significant differences were found between the White and Asian or Pacific Islander and African American/Black communities, indicating that these populations were disproportionately hospitalized for influenza compared to Whites. The 65+ age group was disproportionately affected by influenza compared to all other age groups. When broken down by age and sex, the only age group that saw a significant difference in rates between males and females was the 25-49 age group.

The 2021-22 season saw an increased death rate compared to the 2020-21 season but it still has not yet rebounded to pre-pandemic levels. The 65+ age group saw the highest mortality rate. Vaccination coverage was on par with what had been seen in previous influenza seasons with 43% of cases reported as vaccinated. As the response to the SARS-CoV-2 virus winds down and case counts normalize, it will be interesting to see if influenza returns to its normal circulation patterns or if we see changes in spread.